

POPULAR COMMUNICATIONS


Untold Story of the AM Radio Band

Also in this issue:

- Selected English Language Broadcasts: Winter '95
- How to Get the Most Out of Scanning
- We Review: New AOR AR-8000 Scanner
- Plug into PacTOR

phones, CB, Pirates, Wites, & More!

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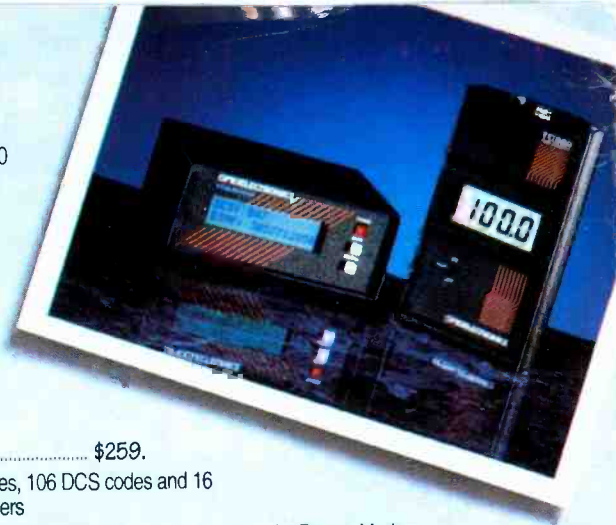
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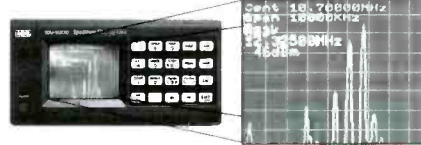
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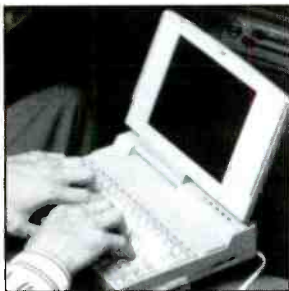
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This month's cover: This 50kW station is located in Dallas Texas, at 1080 kHz—just one of America's many AM broadcast stations. Photo by Larry Mulvehill, WB2ZPI.

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Vox Pop

William Townsend, WB1CRB, of Bar Harbor, Maine, wrote to say that he read *POP'COMM's* October editorial, *The Case of The Abandoned Listeners*. Tells us that he fully understands the reasons for a station to change a format, but one thing he's not at ease with is the rating system that determines listener interest. Like most of us, Bill has always heard of the "ratings," and seen them as the center of many a plot line in TV sitcoms, and even in some movies. But, also like most folks, Bill has never been surveyed as to what or when he watches or listens. He hoped we might offer a few opinions on this inasmuch as, ultimately, it's what determines format and program changes.

Although the science of statistics is highly complex, the gist is that statistically relevant samplings of anonymous members of the broadcast TV and radio audiences are used by broadcasters to ascertain viewing and listening preferences. The program ratings determine how much sponsors pay for radio and TV air time, they play a role in scheduling, and determine which programs are renewed or cancelled. In the radio industry, the standard rating system used is *Arbitron*, while in television it's the *Nielsen* ratings.

There have long been grumbles suggesting that existing systems are unfair or inaccurate to one extent or another. Among the complaints are those questioning the percentage of the audience surveyed, the geographic distribution and demographics of those surveyed, and the validity of the data collection methods.

Nevertheless, the broadcast industry is satisfied that the published ratings are suitable for their various applications. Ratings points in prime time or major markets mean a lot and are responsible for those periodic "sweeps" TV programming bouts filled with audience-stealing lurid exploitation features on the news broadcasts.

Still, no survey has ever asked me which radio programs I listen to, nor for the names of the TV programs I watch. Probably just as well. Producers should pay me to never look at their new programs for fear that I might enjoy one. Experience has proven that all new shows I especially like are virtually ensured a short life. Over the years, dozens of TV shows I thought were promising drew such disastrous ratings, they were prematurely squashed.

When I think back over the past dozen or so years, I recall that I made the mistake of enjoying *Bakersfield P.D.*, *Mama Malone*, *Brooklyn Bridge*, *Police Squad*, *Frank's Place*, *Roxie*, *A.K.A. Pablo*, *Open All Night*, *Coming of Age*, *The Last Precinct*, *The Richard Pryor Show*, and *The Duck Factory*, to name a few.

They came and left so quickly, you may never have heard of most. But had the Nielsen people asked me, those programs

would have gotten my vote. That might have been statistically significant enough to keep them going. But no, the shows had their plugs pulled rather unceremoniously, even though millions of fans (like me) hated to see them go.

Roxie, with Andrea Martin, was about WNYU, an impoverished UHF TV station in New York. The series was cancelled after only two airings, becoming one of the major programming disasters of the 1986-87 season. *The Richard Pryor Show* made it through four shows before being ditched. *Frank's Place*, starring Tim Reid, showed up in so many different time slots during the 1986-87 season, it could never build an audience. Then it was dropped.

It's not that I'm an undiscerning viewer. Many short-lived TV programs promptly head into oblivion without my shedding a tear. *Ace Crawford*, *Private Eye*, *Flatbush*; *No Soap, Radio*; and *Michael Nesmith in Television Parts* were among those. Yet, dozens of highly-rated programs have continued for years despite my indifference towards them.

It seems that Nielsen, Arbitron, and the broadcasters don't care about what you or I like. A friend of mine connected with the programming operations of a major TV network recently revealed that it wasn't true that average audience members are part of a hidden majority. He noted that networks also have direct input from audiences. They evaluate the amount of comments in the mail received for and about their programs and their stars. Ultimately, numbers are the name of the game, and networks strive to reach the largest audience possible.

In the TV Nielsen ratings, programs compete for "ratings points" and a "share." Each rating point equals 954,000 viewing homes, while a share is the percentage of TV homes tuned to a show. A decent showing would be, for instance, an 18.9 rating with a 32 share, which is what NBC got for *L.A. Law* one night in 1991. A weak prime time rating would be 9.6, with a 16 share, received by CBS' *Chicago Hope* one evening last fall. Match those ratings against the 34.9 rating racked up by NBC's *The Cosby Show* during the 1986-87 season, the second year it ended up on top of the heap. The record holder was the final episode of *M*A*S*H* in 1983, which drew a 60.2 rating, with half the TV households tuned in.

In opinion surveys, statistically valid samplings require surprisingly few participants from relevant respondents in order to produce results. These are, after all is said and done, merely straw polls. I saw a recent survey conducted by the *National Law Journal*. The American Bar Association advises me that there are about 865,000 attorneys in the United States. But the NLJ needed to survey only 311 of them in order to state what it claimed was the views of

attorneys of the probable outcome of the O.J. Simpson trial. They said their survey had a margin error of less plus/minus six percent. This survey meant that each attorney polled represented the opinions of 2,780 attorneys.

Even more thinly-spread, Nielsen TV ratings are based upon inputs from 4,000 Nielsen-pollled TV homes in a nation where there are 93,100,000 TV homes. Each one polled is projected to represent the opinions of 23,275 nationwide TV homes. This is deemed sufficient to provide a national survey. It has been proven by statisticians that virtually the same data would result regardless of whether they surveyed 4,000, 40,000, or 400,000 TV homes.

Once I read an Isaac Asimov science fiction short story about things like this. In a future nightmare society, national elections are conducted by asking one random citizen who he/she wants for President. This saves time and money. Statistics proves the method produces the same results as a full-blown election.

My friend the TV programmer suggested I think of each network's three-hour 8 to 11 p.m. prime time hours as if it were a nightly six-page magazine. Each half-hour time period is like a page in the magazine. If there's an hour program on the schedule, then it's a five-page issue. Each page must be as appealing and highly-rated as possible. Its placement following a high-interest page can increase its acceptance. With the finite number of such "pages" available, and the large number of new promising programs waiting to be given a chance, a network is not disposed to spend very many weeks promoting and tolerating a show that isn't bringing in the ratings. Low ratings in this highly competitive field make sponsors nervous.

Don't forget that a show with dismal 9.5 rating translates into nine-million TV homes, and there are several individual viewers in each home. Sounds like a lot, however it's not nearly enough to save a prime time network program. A piddling 9.5 rating would surely be the beginning of the end.

As low rated shows are mercilessly dragged off the networks by crass, insensitive TV programmers, there are millions of people who were never asked what they liked to watch. These folks will miss many of those shows! Our reader, William Townsend is obviously someone who knows the name of that tune. So do you and I.

Here's an idea. Someone ought to start up a new cable channel that runs only prematurely killed-off prime time series that failed because of low ratings on the major networks. At least nine-million people would sign-up right off the bat. You and I will be at the head of the line. It would immediately have more viewers than (yawn) CSPAN. Ted Turner, where are you now that we need you? ■

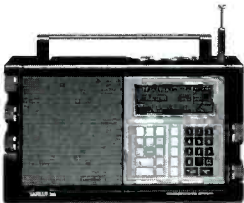
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MAILBAG

LETTERS TO THE EDITOR

Each month we select representative reader letters for our Mailbag column. We reserve the right to condense lengthy letters for space reasons. All letters submitted must be signed and show a return address. Upon request, we will withhold sender's name should the letter be used in Mailbag. Address letters to Tom Kneitel, Editor, Popular Communications Magazine, 76 N. Broadway, Hicksville NY 11801.

Whither WGY-AM?

In your October editorial about abandoned broadcast formats, *POP'COMM* repeats the inaccuracy regarding the demise of WGY, Schenectady, N.Y. This 50 kW station is still on 810 kHz with the same call letters and pretty much the same format they've had for 70 years. Actually, I think you got WGY (AM) confused with WGY-FM. The WGY-FM call letters were changed to WRVE coinciding with a format change. These stations' studios until last summer were co-located with WRGB (TV). They now have a new studio facility and a new PC audio storage system that eliminates most tape. I sold it to them.

Criss Onan,
Broadcast Electronics Inc.,
Fairport, NY

Please stop reporting WGY has failed. The station is the dominant AM facility in upstate New York. WGY-FM (ex-WGFM) has changed calls to WRVE with a Rock/AC format. I was operations manager of both stations from 1978 to 1987 and still have a great affection for them. Both stations became a part of Dame Media Stations last January.

Michael Neff, N3KBJ,
Operations Manager,
Station WHP,
Dame Media Stations,
Harrisburg, PA

Thanks for pointing this out. The root source of the confusion was the FCC, itself. On March 11, 1994, the FCC's Mass Media Bureau reported that WGY (AM) had changed its call letters to WRVE. The *POP'COMM* problem came about when we researched and wrote the editorial, trusting that the official FCC records would be the most accurate reference material available concerning broadcast licensees. Months later, by the time the FCC finally got around to rescinding its WGY (AM) misinformation, our October editorial had already been written and trundled off to the printer. It was beyond

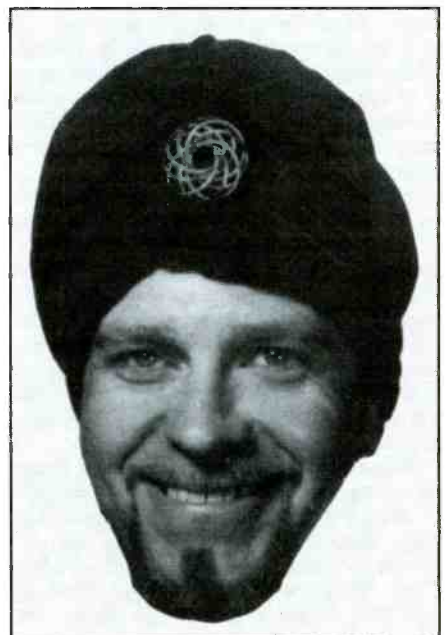
the point where we could add "FM" to the WGY call letters. The FCC doesn't have to answer to anybody. Please remember the FCC was the agency that cooked up the regulations intended to reduce your cable TV bill. Sorry about the WGY mix-up.—Editor.

A Hello From the Mojo Man

From 1958 to 1977, I was *The Mojo Man*, a Rock Radio air personality DJ in the era when radio was fun. During those years, I did CHR and Rock shows on WING (Dayton, Ohio), WORD (Spartanburg, S.C.), WOHO (Toledo, Ohio), WIFE (Indianapolis, Ind.), WPDQ (Jacksonville, Fla.), and WRKT (Cocoa Beach, Fla.). I certainly enjoy *POP'COMM*, and I liked your October editorial on abandoned broadcast formats.

At age 54, today, *The Mojo Man* is alive, well, and doing fine in the ice cream street vending business. Winters we live in Tampa, Fla. Summers we work in Weirton, W.V., on the fringes of Pittsburgh, Pa. It gets tempting sometimes when friends from my broadcasting days say *The Mojo Man* could again be an air personality. However, memories of revolving door jobs, as pointed out in October's editorial, come flooding into my mind. I'm passing along a photo of *The Mojo Man* taken at age 31.

Sid Grubbs, *The Mojo Man*,
S&S Ice Cream Co.,
Weirton, W.V.



The Mojo Man, at age 31, was a Rock Radio DJ for more than 20 years during the heyday of AM-Rock.

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A Day in the Life of the AM Broadcast Band

Mediumwave—The Untold Story!

BY ANDREW W. CLEGG

With nearly 5,000 AM broadcast stations operating in the U.S., and many more in Canada and Mexico, the AM broadcast band from 540-1600 kHz is chock full of signals. Due to the propagation effects, natural and man-made interference, and operating schedules, reception on the AM band varies considerably throughout the day and night. I thought it would be interesting to monitor the AM band with a spectrum analyzer for a 24-hour period in order to study the variations in signal reception. What I found was quite fascinating.

The Budget Spectrum Analyzer

A spectrum analyzer simply displays signal activity across a given portion of the spectrum. Professional units are quite expensive (upwards of tens of thousands of dollars), but are quite versatile. Recently, several companies have begun offering spectrum analyzer hardware and software for the non-professional market. These units are relatively inexpensive and offer many features.

For fun, I decided to write my own software and use my existing hardware (a general coverage computer-controllable radio, an old laptop computer, and a computer interface unit) to create a budget spectrum analyzer. The basic function of the analyzer is simple: the computer sets the radio to a specific frequency, reads a digitized version of the radio's signal strength meter and records it on disk, then steps to the next frequency and repeats the process. The upper and lower frequency limits and the step size are controlled by the software. At the end of one sweep, the computer has recorded the signal strength as a function of frequency across the user-defined band.

I wrote the software to scan between 530-1700 kHz, which is the AM broadcast band including the new extended portion from 1610-1700 kHz and the Traveler's Information Service (TIS) frequency at 530 kHz. The step size was 10 kHz, which is the standard spacing between AM broadcast stations in North America. The program was fully automated to provide unattended spectrum analysis. I started the program running at midnight, and let it run continuously until the following night. A



Figure 1. The "budget" spectrum analyzer: laptop computer (left), interface unit (middle), and general coverage digital radio (right).

total of 76 spectra of the AM band were acquired in the 24-hour period.

A Day in the Life of the AM Band

Figure 2 shows two sweeps of the AM band: one obtained during the day, and the other at night. The horizontal axis is frequency, and the vertical axis is signal strength. Signals appear as bars in the spectrum, with the height of the bars indicating signal strength. The strength is measured on a scale of 0 to 63; a value of 63 is a full-scale deflection (about 60 dB over S9) on the radio's signal strength meter.

The daytime spectrum shows several strong stations, including 570, 780, 980, 1120, 1220, 1390, and 1580 kHz. These are local stations, and their strong signals are due to their proximity to my listening post. Notice there are many frequencies where no signals are heard in the daytime:

540-550, 650-670, 690-710, 870-880, and 1160-1180 kHz for example, as well as the entire extended portion of the band from 1610-1700 kHz. The signal at 530 kHz is the TIS station at Washington National airport, a low power station continuously broadcasting parking information and construction updates.

The spectrum obtained at night is very different from the daytime spectrum. For one thing, most of the strong local stations have disappeared or weakened to the point that they merge into a sea of other signals. Why? The answer lies in the spectrum!

Take a moment to compare the day and night spectra. Notice that during the day, the spectrum is dominated by relatively few stations, and that many frequencies are devoid of signals altogether. But at night, the entire band is filled with a general "continuum" of stations—that is, there's a signal at almost every channel in the band. The reason is due to propagation charac-

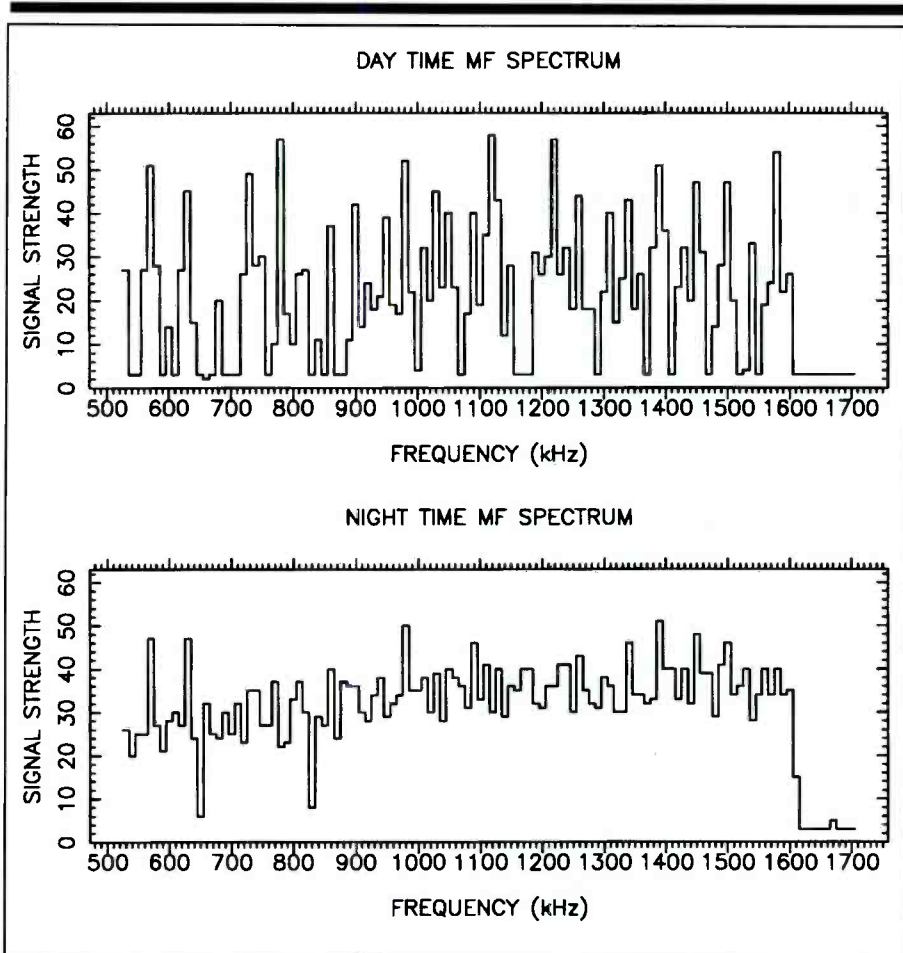


Figure 2. Spectrum of the AM broadcast band near noon local time (top) and near midnight local time (bottom).

teristics on the AM band. At night, AM broadcast band signals can travel a much greater distance because the lack of absorption in the lower ionosphere combined with refraction of the signals from the upper ionosphere. At night, then, the spectrum consists not only of the signals from the relatively nearby stations, but also the signals from hundreds of distant stations. Reception of these distant stations improves as night falls, and their signals gradually "fill in the gaps" in the spectrum between the local stations.

The chance for two or more stations on the same frequency to interfere with each other is greatly increased at night when their signals travel farther. As a result, many stations decrease their power at night to reduce the distance their signal can be received, and/or they change their antenna beam pattern to concentrate their signal in a direction where the risk of causing interference is reduced. This is the reason the received strength of many local stations is reduced in the night time spectrum.

The Dynamic Spectrum

A good method of displaying all spectra obtained during the 24-hour period in a single plot is shown in Figure 3. In this type of plot, called a dynamic spectrum, fre-

quency is along the horizontal axis, and time (from 0 hours to 24 hours local time) is shown along the vertical axis. At the intersection of a given time with a given frequency, the signal strength at that frequency and time is indicated by a small gray box, or pixel. The darkness of the pixel indicates signal strength—the darker the pixel, the stronger the signal. In the dynamic spectrum, signals that remain strong for extended periods of time appear as vertical stripes in the spectrum (such as the strong signal from the station at 1390 kHz).

A large amount of information is included in the dynamic spectrum. The times of sunrise and sunset are indicated for the particular day that this dynamic spectrum was acquired. Some of the many features and phenomena that can be discerned from this plot include:

- The general day/night difference in the spectrum is readily apparent. Between sunrise and sunset, the spectrum is dominated by a relatively small number of local stations. Before sunrise and after sunset, however, the spectrum is filled with an almost solid gray mass, indicating the presence of signals at virtually all frequencies.

- If you look closely, you can discern a very interesting but subtle phenomena: at the lower frequencies the distant stations

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start disappearing slightly before sunrise and don't reappear until slightly after sunset. At the higher frequencies, however, the distant signals don't disappear until slightly after sunrise, and begin to reappear slightly before sunset. This is a result of the lower region of the ionosphere being a stronger absorber of low frequency signals than high frequency signals. Near sunrise and sunset, distant high frequency signals are able to punch through the ionosphere better than distant low frequencies.

•No signals were received at all in the new extended portion of the AM band from 1610-1700 kHz. Apparently the migration of AM stations into this new part of the band is occurring very slowly. Perhaps it's because many radios can't even receive this part of the AM band, so station owners figure there will be fewer listeners. In any event, since no signals are present here, this portion of the band is a good indicator of the general atmospheric noise level, which brings me to my next point...

•The presence of signals in the extended band after approximately 9 p.m. (21:00) is not due to radio stations, but rather to the presence of thunderstorms near my listening post. Interestingly, the storms didn't hit my immediate area until after 11 p.m. that night. That implies that with a little bit of clever computer programming, spectrum analysis can be used to alert the user

to the approach of bad weather hours in advance of its arrival!

•The change in transmitter power and/or antenna beam pattern for the local sta-

tions is readily apparent in the dynamic spectrum. Some specific examples: the station at 780 kHz, which is quite strong during the day, disappears altogether at night. This station operates during the daytime only, and shuts its transmitter off completely at night to avoid interference to other stations on the same frequency. The stations at 1030, 1120, 1220, and 1540 also operate day-only. The station at 1580 kHz, on the other hand, is present both day and night, but its signal is much stronger during the day. This is a result of both a change in antenna pattern and a change in power, from a mighty 50,000 watts during the day to a puny 270 watts at night!

•One phenomenon that left me scratching my head for awhile is the station at 570 kHz. I noticed that this station undergoes a drastic decrease in signal strength between approximately noon and 5:30 p.m. (17:30). While many stations decrease their signal strength at night (including this station), there would be no reason to reduce signal strength during broad daylight. It turns out their station engineers were conducting antenna tests, and they announced that their listeners shouldn't be concerned if the station's signal was weaker than usual during certain periods of the day!

The Rest of the Spectrum

Spectrum analysis provides a wealth of information about a variety of processes related to radio propagation, transmitter/antenna characteristics, and atmospheric noise. The AM band is only a starting point. There's a lot more spectrum left to be analyzed. Spectrum analysis is a powerful way of understanding radio bands in a fashion that is hard to achieve by casual listening.

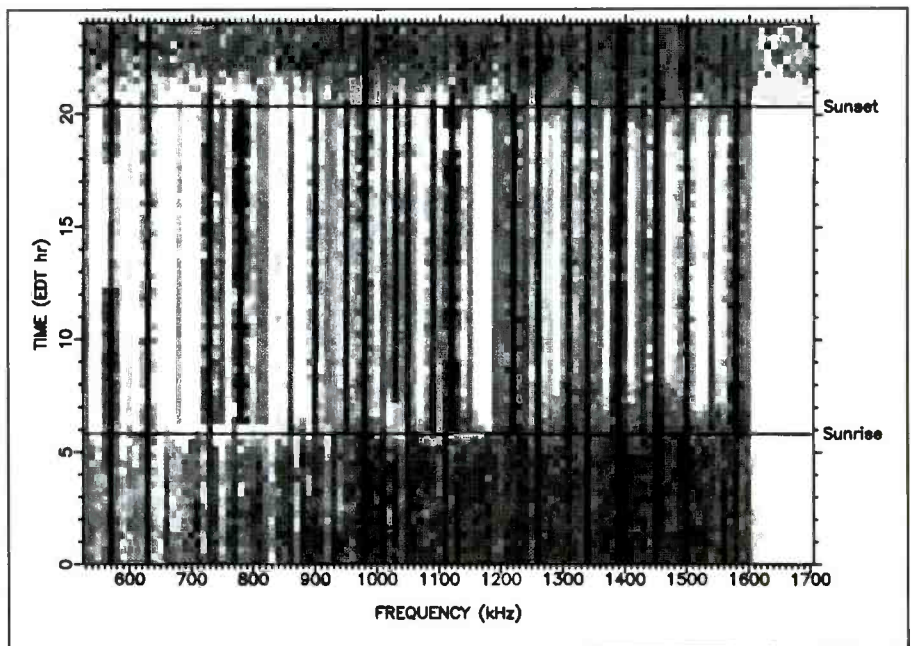


Figure 3. Dynamic spectrum of the AM broadcast band showing signal activity throughout a 24-hour period. Signal strength is indicated by shades of gray (dark meaning strong), as a function of frequency and time.

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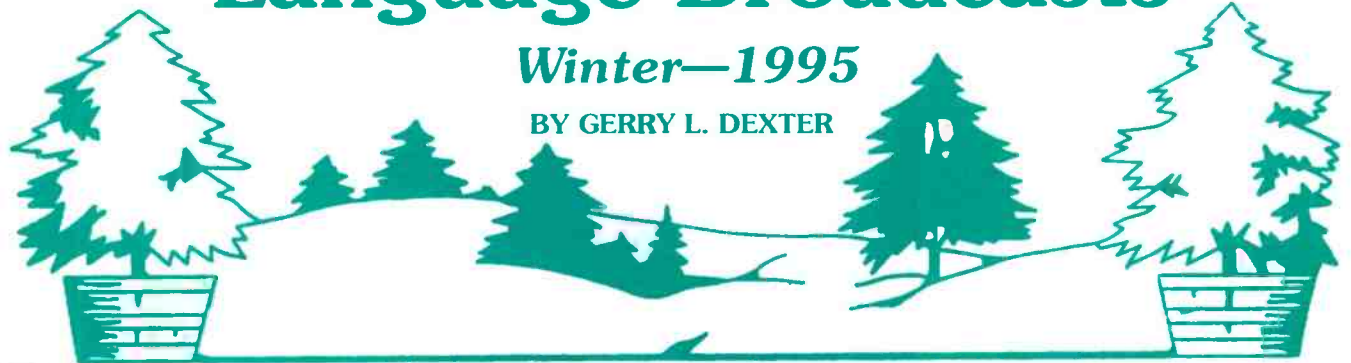
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Winter—1995

BY GERRY L. DEXTER



There are hundreds of English language broadcasts aired every day on shortwave. This is a representative listing and is not intended to be a complete guide. While every attempt is made at making the list as up-to-date as possible, stations often make changes in their broadcast hours and/or frequencies with little or no advance notice. Some broadcasters air only part of a transmission in English or may run the English segment into the next hour or more. Some stations have altered schedules on weekends. Numbers in parenthesis indicate an English start time that many minutes past the hour. All times are in UTC.

Time	Country	Frequency	Time	Country	Frequency
0000:	BBC	5975, 6005, 6175, 7325, 9590, 9915, 11750, 12095, 15260		Radio New Zealand	15115
	RFPI, Costa Rica	7385 USB, 9400, 15030 USB		HRVC, Honduras	4820
	Radio Havana Cuba	6010, 9550, 9820, 13700		Radio Cultural, Guatemala	3300
	China Radio Int'l	9780, 11715		TIFC, Costa Rica	5055
	Spanish National Radio	9540		China Radio Int'l	11715, 11840
	(30) VOIRI, Iran	7100, 9022		Radio Prague, Czech Rep.	7345
	AWR, Costa Rica	9725, 11870		(40) V of Greece	9380, 9420, 11645
	R. Prague, Czech Republic	7345		Swiss Radio Int'l	6135, 9860, 9885
	R. Yugoslavia	9580, 11870		UAE Radio	11945, 13675, 15400
	(40) R. Nacional Venezuela	9540		R. Japan	11885, 15325
	R. Pyongyang, N. Korea	11335, 13760, 15130		R. Lesotho	4800
	(30) R. Netherlands	6020, 6165, 9840		(30) R. Tirana, Albania	9580, 11840
	(50) RAI, Italy	9750, 11800		R. Ukraine Int'l	7285, 9685, 9860, 12030
	R. Ukraine Int'l	7285, 9685, 9860	0400:	Voice of Turkey	9445
	R. Vlanderen Int'l, Belgium	6035, 9930		R. Romania Int'l	6155, 9510, 9570, 11830, 11940
0100:	R. Canada Int'l	6120		Voice of America	5995, 6035, 6040, 6140, 7170, 7280, 7405, 9575, 9885
	R. Budapest, Hungary	6025, 9835, 11910, 15220		R. Botswana	4830, 7255
	Radio Moscow	7205, 9620, 9670, 11665		R. Prague, Czech Rep.	7345
	Swiss R. Int'l	6135, 9885, 12035		(30) R. Nigeria	4770
	(30) R. Tirana, Albania	9580, 11840		HCJB, Ecuador	9745, 12005
	R. Japan	5960, 11860, 15195, 17775, 17810, 17845		China Radio Int'l	11680, 11840
	(30) R. Austria Int'l	9655	0500:	Kol Israel	7465, 9435, 17545
	R. Korea, S. Korea	7550, 15575		V of Nigeria	7255
	HCJB, Ecuador	9745, 12005		(30) R. Austria Int'l	6015, 6155, 13730
	Slovak R., Slovakia	5930, 7310, 9810		V of Nigeria	7255
	(30) V of Greece	9380, 9420, 11645		Radio Havana Cuba	9820
	Deutsche Welle, Germany	6040, 6085, 6145, 9580		CBC Northern Service	9625
	R. Ukraine Int'l	9860, 12030		Deutsche Welle, Germany	5960, 9870
0200:	(30) R. Sweden	6155, 9850		R. Japan	9565, 9725, 11885
	RAE, Argentina	11710		(Sun) R. Norway	5905
	V of Free China, Taiwan	5950, 9680	0600:	GBC, Ghana	4915
	R. Romania Int'l	6155, 9510, 9570, 11830, 11940		V of Mediterranean, Malta	9765
	R. Cairo, Egypt	9475, 11660		Radio Kiribati	9825
	(Sun) R. Norway	5905, 9560		Vatican Radio	6245
	(30) R. Yugoslavia	9580		ELWA, Liberia	4760
	(30) R. Portugal	9570, 9705, 11840		Channel Africa, S. Africa	5955, 15220
	(30) R. Budapest, Hungary	9835, 11910, 15220	0700:	R. Prague, Czech Rep.	7345
	(45) R. Tirana, Albania	9580, 11840		Wings of Hope, Lebanon	11530
	(50) Vatican Radio	6095, 7305		(40) TWR, Monaco	7385
0300:	(30) R. Bulgaria	9700, 11700		V of Free China, Taiwan	5950
	R. Educacion, Mexico	6165 (English/Spanish)		Radio New Zealand	9700
				(15) HCJB, Ecuador	9745, 11925, 21455 USB

“The R8 is a highly sophisticated receiver. We'd call it professional grade, or about as close to it as receivers get these days.”

*Staff review
Popular Communications*

“The R8 is like a breath of fresh air, with its ground-up engineering and up-to-date digital control from the front panel. I am very pleased to see a quality HF receiver of American manufacture that should successfully compete on the world market.”

*Bill Clarke
73 Amateur Radio Today*



“Overall, the Drake R8 is simply the best radio we have ever tested for quality listening to programs...”

There's nothing else quite like it.”

*Lawrence Magne
Monitoring Times*

“The best of the best for high-quality listening to news, music and entertainment from afar.

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*Editor's Choice
Passport to World Band Radio
Tabletop Receivers for 1992*

The ears have it!

When we introduced the American-made R8 Worldband Communications Receiver, we knew it would be judged by some very discerning ears, experts accustomed to the finest in short-wave listening equipment from around the world. After listening to the world on the Drake R8 loud and clear, they have delivered a decisive verdict.

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Announcing The New... Tucker SW-500

Portable Shortwave Active Antenna / Tuner

Yours For Only \$79⁹⁵

If you want to expand your range or just want to get better reception from the stations you currently listen to, we have developed the new TUCKER SW-500 Active Antenna. This portable (only 1.75" x 5.5" x 4.6") antenna is perfect for indoor use by itself, in conjunction with an outside antenna or both! Just look at all this great little antenna gives you:

AMPLIFIED RECEPTION OF AM AND ALL SHORTWAVE BANDS:

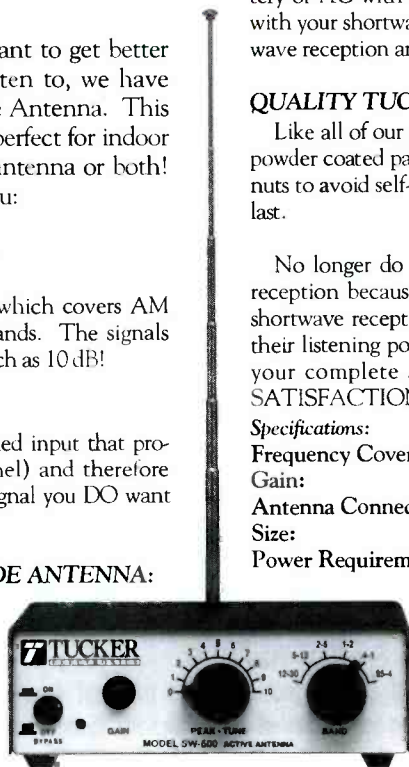
Our antenna tunes from 200 kHz to 30 MHz which covers AM broadcast, all shortwave and all amateur radio bands. The signals from the whip are electronically amplified by as much as 10 dB!

WE USE TUNED INPUT CIRCUITRY:

Unlike previous designs, our antenna uses a tuned input that provides selectivity (controllable from the front-panel) and therefore reduces interference and noise and increases the signal you DO want to hear.

USE IT BY ITSELF OR WITH YOUR OUTSIDE ANTENNA:

This antenna works great indoors with the supplied whip or connect your outside antenna to it for even greater reception. You can select between the two from a front-panel switch. Your outside antenna can then be tuned and amplified. You can even disconnect both antennas from the circuit and use your radio's antenna.



COMPLETELY PORTABLE... TAKE IT ON YOUR NEXT TRIP:

With its small size and low current requirements (it uses a 9 V battery or AC with supplied AC adapter), the SW-500 is great to pack with your shortwave radio on your next trip for much improved shortwave reception anywhere.

QUALITY TUCKER BRAND CONSTRUCTION:

Like all of our products, construction is first rate with an electronic powder coated painted cover and alodined chassis. We even use pem nuts to avoid self-tapping screws. This antenna is built in the USA to last.

No longer do apartment and condo dwellers have to suffer poor reception because of antenna restrictions! Anyone wanting better shortwave reception should make the new Tucker SW-500 a part of their listening post! As with all of our other Tucker Brand products, your complete satisfaction is assured with our no-risk 30 day SATISFACTION PLUS guarantee.

Specifications:

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- Antenna Connections: RCA jacks (1 input, 1 output)
- Size: 1.75"H x 5.5"W x 4.6"D
- Power Requirements: 9 VDC (9 V battery or supplied 120 VAC adapter)

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Tucker Shortwave Antenna

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A complete ready to install simple shortwave outdoor antenna. 40 feet long w/50 feet of coax lead-in. Specify connector, your choice of 3.5", RCA, PL-259 or BNC connector.



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Only \$189

Sony brings together some of their most innovative features in this outstanding, low cost receiver. Now, for the first time, the remarkable synchronous detection feature is available in a receiver for less than \$200! Not only do you get fade-free shortwave reception, but also SSB and FM stereo! Covers 150 kHz to 30 MHz continuously as well as AM and FM broadcast. You can tune via direct entry from the keypad or the up-down control. The receiver performance is typical Sony quality with dual conversion superheterodyne circuitry. Tuning is in 1 kHz steps with a large LCD display. Includes 22 station presets, a built-in clock with sleep timer and a large 3" speaker. Comes complete with compact antenna and guide book. One of the most exciting new receivers in years!



BEST SELLER

Sony ICF-SW100S

World Band Receiver

IN STOCK!

Only \$389

This new receiver gives you outstanding performance in a radio small enough to fit in your shirt pocket. It is the smallest radio available that features synchronous detection. This ultimate travel radio is perfect for taking abroad with its world time clock that is adjustable to any time zone by setting it to the names of major cities around the world. It can also wake you up every morning with its built in dual clock/alarm. Keeping track of each of its 50 memories is a snap because you can store the name of the station on the LCD display. Covers 150 kHz to 30 MHz continuously as well as AM broadcast and FM stereo. Comes complete with AC power adapter, stereo headphones, power supplied active antenna, shortwave guide and carrying case. Measures only 4 3/8" x 1 1/16" x 2 7/8".

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Bearcat SC150 Y/B SportCat

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The SportCat is designed specifically for sporting events, allowing you to go from one channel to the next with just a touch of a button. You can go store up to 10 custom frequencies and for added convenience, there are also 10 corresponding channel identifiers. Features include 100 channels in 12 bands with 10 banks, preprogrammed band search, 10 priority channels, channel lockout and one touch weather. Turboscan lets you scan 100 channels per second and Turbosearch searches 300 steps per second. The unique data skip allows you to skip over unwanted data transmissions and substantially reduces birdies. Memory backup retains frequencies up to 3 days without batteries. The supplied rechargeable NiCad battery pack will supply up to 12 hours of use in the closed squelch position. Includes charger/AC adapter, rubber antenna, beltclip and earphone. Available in either black (SC150B) or striking yellow (SC150Y). 2.5" x 1.7" x 6".

Tucker TSA-75

Magnetic Mount Mobile Scanner Antenna

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The TSA-75 is an outstanding magnet-mount scanner antenna for 25 to 1300 MHz. The 19" whip is stainless steel for rust-proof performance for years to come. Our super-strong magnet is better than anything we've ever carried before. 12' of RG-58 coax comes complete with a BNC connector for easy connection to your scanner. We warranty this antenna for one year and as with our other Tucker Brand products, it comes with our 30 day SatisfactionPlus guarantee.

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30 Days - No Questions Asked Guarantee

JIM PSU 101

Scanner Desk Charger/Power Supply

Only \$59⁹⁵

Combination desk charger/regulated power supply unit securely holds your scanner in a handy position. Works with the AOR 1000XLT most Bearcat and Realistic scanners.

Bearcat BC860XLT

100 Channel Programmable Scanning Radio

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Experience the power of 100 channel memory capacity...program each of these memory channels for your favorite frequency and go! 12 Bands, 10 Banks: enjoy 12 bands with Aircraft and 800 MHz; 10 banks of 10 channels are useful for grouping similar frequencies and selectively scanning these groups. A full frequency LCD display shows the channels being scanned and the frequency entered into each channel with backlit display. Features include Automatic Squelch, One-Touch Weather, Channel Lockout, Memory Backup, Programmable Delay, Manual Channel Access, 10 Priority Channels, Track Tuning, Twin Turbo™ Scan and Search, and Unique Data Skip.



Optoelectronics DC440

CTCSS/DTMF Decoder

Only \$259

The DC440 decodes sub-audible tones and codes as well as DTMF (touch-tone) characters. The high impedance audio input connects to the discriminator circuit in any VHF/UHF receiver, service monitor or scanner. An additional squelch circuit connection prevents false decodes. A CI-V serial data interface is provided. A two by sixteen alpha numeric, back lit, LCD display provides easily readable data output. Code Log software is available for data logging. Support by ScanStar and ScanCat software is anticipated for use in computer aided scanning. For portable operation there is an available internal NiCad battery pack. NiCad option.....\$39



Ramsey SCN-1

800-950 MHz Scanner Converter Kit **Only \$49⁹⁵**

Tune in on all the action up in the 800 to 950 MHz band with your existing scanner. The SCN-1 converts uninterrupted 800 to 950 MHz frequencies down to 400 to 550 MHz which is tuned by your regular scanner. Hook-up is very easy, just connect your antenna to the SCN-1 and jumper the SCN-1 output to your scanner antenna jack- that's it. And, if you don't have an antenna good for the 800 to 950 MHz band, we even give you instructions on how to build a low cost, yet great performance antenna! Power is supplied by any 9 to 15 Volt DC source and the on/off switch conveniently switches the converter in and out of the circuit when not in use, saving you the hassle of switching antenna leads around. Building the SCN-1 is easy, fun and takes only an hour or so, all critical parts are pre-aligned for goof-proof assembly. (Case Not Included) CSCN: Matching case and knob.....\$14.95



Bearcat 8500XLT

500 Channel Scanner-With 800 MHz!

Only \$375

Without a doubt, this is the premier scanner on the market today. It features coverage from 25 MHz to 1.3 GHz* in 500 channels. 20 banks store these channels and your 20 most important channels can be designated as priority channels. The exclusive dot matrix-alpha numeric illuminated display allows you to program in the name of the station (Dallas Police for example) on the screen for easy identification of each channel. The great features of the 890XLT are also included such as a VFO knob, turbo scan, selectable scan delay, reception counter and step select. If you want the best, get an 8500XLT today!

* Not Continuous

Sigma SE 1300 Only \$89

VHF/UHF Discone Antenna

If you've been looking for a superior wide band omni-directional antenna covering 25 to 1300 MHz, this is it! The SE 1300 is the ultimate wideband omni-directional antenna for hours of listening pleasure. Not only is it a receiving antenna, but it can also transmit on 50 MHz, 144 MHz, 430 MHz, 900 MHz and 1200 MHz with a maximum power rating of 200 watts. The antenna has stainless steel construction and comes complete with low-loss "N" connector, mounting kit and short mast section. The SE 1300 is excellent for indoor installation since it's only 5' 6" and weighs just 2.2 lbs, yet its construction and weather protected feedpoint beg to be out in the elements. This antenna is a must if you want the best possible results! Also available as Diamond D-130 w/PL-259 connector.....\$99



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Time	Country	Frequency	Time	Country	Frequency
0800:	Radio Australia	5995, 6020, 6080, 7240, 9580, 9710, 11720, 15240, 17695	1600:	R. France Int'l	6175, 11705, 12015, 15530, 17620, 17795, 17850
	KNLS, Alaska	7365		R. Pakistan	9470, 11570, 13665, 15515, 15555, 17555
	SIBC, Solomon Is.	5020, 9545		BSKSA, Saudi Arabia	9705, 9720
	CFRX, Canada	6070		(30) Vatican Radio	11640, 15090
	(50) TWR, Monaco	9480		UAE Radio	13675, 15320, 15395, 21605
	(30) R. Austria Int'l	6155, 13730			
0900:	(10) R. Ulanbator, Mongolia	11850, 12015	1700:	(30) HCJB, Ecuador	15350, 21455 USB
	FEBC, Philippines	11690		Voice of Azerbaijan	15240
	R. Vlanderen Int'l, Belgium	5910, 9905, 13675		Georgian Radio	11910
	Radio One, Singapore	5010, 5052, 11940		Channel Africa, S. Africa	11770
	AWR, Italy	7230		R. Pakistan	11570, 15550
	KTWR, Guam	15200		R. Moscow	9505, 9540, 9880, 11705, 11940, 11960, 12050, 15180, 15290, 15385, 17605, 17735
1000:	V of Vietnam	9840, 12020, 15010		(30) Vatican Radio	9725, 11625
	(30) Radio Korea	11715	1800:	RAE, Argentina	15345
	AWR, Costa Rica	5030, 9725, 13750		Radio Kuwait	11990
	Voce of America	5985, 9590, 11915		BSKSA, Saudi Arabia	9705, 9720
	Kol Israel	17545		(40) Voice of Greece	15650, 17525
	Radio New Zealand	9700		R. Nacional, Brazil	15265
	FEBC, Philippines	9800, 11685		(Sun) R. Norway	9590, 11860
	(30) UAE Radio	13675, 15320, 15425, 21605		(30) R. Sweden	6065, 9655, 15145
1100:	R. Singapore	9530	1900:	Monitor Radio, USA	9355, 9370, 13770, 15665, 17510, 21640
	R. Japan	6120, 9610, 15445		HCJB, Ecuador	17490 USB, 17790, 21455 USB, 21480
	R. Pyongyang, N. Korea	6576, 9977, 11335		(30) R. Netherlands	17605, 21590
	HCJB, Ecuador	15115, 17890		(30) VOIRI, Iran	9022, 11965
	R. Jordan	13655		Spanish National Radio	15375
	NBC, Papua New Guinea	4890		Kol Israel	7465, 9435, 11585, 11603, 11675, 15640, 15650, 17575
	R. Korea, S. Korea	6145, 9650, 9980		R. Japan	9535
	(30) R. Vlanderen Int'l, Belg.	15545, 17540	2000:	(Sun) R. Norway Int'l	9590
	AWR, Costa Rica	5030, 9875, 11870		(30) Kol Israel	7465, 9435, 11587, 17575
	Kol Israel	15640, 15650, 17575		(05) R. Damascus, Syria	12085, 15095
	R. Moscow	11705, 11900, 11985, 12020, 13615, 15125, 15280, 15305, 15320, 15355, 15420, 15485, 17560		(45) All India Radio	9910, 9950, 11620, 15265
	R. New Zealand	9700		(30) R. Cairo, Egypt	15375
	Monitor Radio, USA	7535, 9355, 9425		Swiss Radio Int'l	9885, 12035, 13635, 15505
1200:	(30) R. Finland Intl	11900, 15400		R. Kuwait	13620
	R. Australia	6020, 6080, 7240, 9580, 9710, 15630		(30) R. Canada Int'l	13650, 13670, 15325, 17820,
	(30) R. Bangladesh	13620	2100:	(30) R. Dniestr Int'l, Moldavia	15290
	R. Tashkent, Uzbekistan	9540, 15220, 17745		(10) R. Damascus, Syria	12085, 15095
	Radiobras, Brazil	15445		Radio Havana Cuba	17760
	China Radio Int'l	9655, 9715, 11660, 11795		(Sun) Radio Norway	6015, 9600
	(30) R. France Int'l	9805, 13625, 15195, 17575		(30) R. Yugoslavia	6100, 9505
	(30) V of Vietnam	9840, 12020, 15010		(15) Radio Cairo, Egypt	9900
	(30) SLBC, Sri Lanka	9720, 15425		(30) R. Vilnius, Lithuania	9675, 9710
1300:	(30) R. Vlanderen Int'l, Belg.	15545		(30) R. Canada Int'l	5995, 7260, 11945, 13650, 13670, 15140, 15325, 17820
	KNLS, Alaska	9615	2200:	(30) Kol Israel	7405, 7465, 9435, 11603, 15640
	(30) R. Tashkent, Uzbekistan	9540, 15220, 17745		V of Free China	17750, 21720
	(30) R. Finland	15400, 17740		R. Canada Int'l	5960, 11845
	(35) Voice of Greece	15630, 17520		R. Bulgaria	9700, 11720
	(30) UAE Radio	13675, 15320, 15435, 21605		R. Ukraine Int'l	11780, 11950
1400:	China Radio Int'l	7405		R. Havana Cuba	6180
	R. France Int'l	11910, 15405, 17650		V of UAE	9770, 11885, 13605
	V of Mediterranean, Malta	11925		(45) All India Radio	9910, 11715, 15110, 15145
	R. Canada Int'l	11955, 17820	2300:	V of Turkey	9445
	(45) R. Ulan Bator, Mongolia	7260, 13780		(30) R. Vlanderen Int'l, Belg.	9930, 13655
	R. Jordan	9560		R. Pyongyang, N. Korea	11700, 13650
	All India Radio	7412, 9950		(30) R. Netherlands	6020, 6165
1500:	R. Algiers Int'l	11715, 15205, 17745		(35) V of Greece	9425, 11595, 11645
	FEBA, Seychelles	9810, 11710, 15330		R. Canada Int'l	5960, 11845
	(40) V of Greece	15630, 15650, 17525		(Sun) R. Norway	6060
	Polish Radio	7285, 9525, 11840		(30) V of Vietnam	90840, 12020, 15010
	R. Pyongyang, N. Korea	9325, 9640, 9977, 13785		AWR, Costa Rica	5030, 9725, 11870
	TWR, Guam	15610		R. Pyongyang, N. Korea	11700, 13650
	V of Ethiopia	9560			
	Channel Africa, S. Africa	11770			
	(30) All India Radio	7412, 9850, 10330			

Radio: The Golden Era

We Look at Our Common Heritage, & Fix a Few Popular Misconceptions

BY ALICE BRANNIGAN

In December of 1921, The Tribune Company, of Chicago, Ill., led by Col. Robert R. McCormick, began negotiations to acquire a radio station. In 1922, the Tribune began broadcasting a regular schedule of current events, stock ticker prices, and sports summaries. These became known as the "Tribune-Westinghouse" programs, and were sent out over station KYW.

But McCormick really wanted to own a station. Popular current mythology usually reports he assumed control of Chicago broadcaster WDAP. But it never happened. Nevertheless, this error was repeated in the often-quoted short history of WGN that appeared in the authoritative industry publication, *Broadcasting* (May 14, 1962).

WDAP had been a 1 kW station on 833 kHz started in May of 1922. It was run as a one-man operation by Ralph *The Sheik* Shugart, from the Drake Hotel. Shugart was WDAP's licensee, operator, engineer, announcer, telephone operator, secretary, and publicity director. But WDAP was unrelated to the roots of WGN. It's likely the confusion later arose because WGN established studios in the Drake Hotel.

Research in *The Tribune* archives shows that in March of 1924, McCormick, in fact, had taken over station WEBH. This station operated on 810 kHz with 1 kW, from the Edgewater Beach Hotel. He changed WEBH's call letters to WGN, which he said stood for the Tribune's slogan, *World's Greatest Newspaper*.

By 1925, McCormick realized that 1 kW was inadequate to cover the entire Chicago metropolitan area. He then purchased WTAS (500 W) and WLIB (15 kW). Both of these stations shared time on 720 kHz from Elgin, a Chicago suburb. McCormick's purchases were part of a long range master plan.

In 1927, the Tribune succeeded in acquiring, for WGN's use, the clear channel frequency of 720 kHz. Tribune-owned 720 kHz stations WTAS and WLIB were then absorbed into WGN, ceasing to exist as separate entities.

Power was increased with the passage of time. In 1926, the power was 10 kW, and a year later it was 15 kW. A year after that it was 25 kW, and by 1934, WGN marked the formal dedication of its 50 kW transmitter. In only ten years, WGN had gone from nowhere to a becoming nation-



STATION W-G-N

CHICAGO TRIBUNE, Zenith Station, Begins Broadcasting at 6 o'clock tonight from the Edgewater Beach Hotel. Wave Length 370 meters.

INAUGURAL PROGRAM 6 p. m. Saturday to 8 a. m. Sunday

<p>Dinner Hour Program 6 to 7:30 Dinner Music.....Orchestra "Lionel".....John H. Cannon, Rockford, Ill. No. 6000 a program of the State's Governor of Illinois. "Clinic," baritone solo.....The O'Grady Police, Ill. No. 6000 a program of the State's Governor of Illinois. Soprano Solo.....Monica Graham Smith Readings.....Julia McGhee Dance Music.....Orchestra The Agricultural Program address..... D. R. Bradford. No. 6000 a program of the State's Governor of Illinois. "Winkie Winkie" soprano solo.....Sara McCann Business Solo.....George G. Smith Dinner Music.....Orchestra Baritone Solo.....Walter Allen Smith Trio—6 to 6:55 and 6:55 to 7:00</p> <p>7 o'clock to Midnight Dance Music.....Orchestra Address.....E. P. McDonnell, Jr., Presi- dent Zenith Radio Corp. Soprano.....Miss Edith Murray, com- missioner Chicago Civic Opera. Jazz Van Grove, conductor of the Chicago Civic Opera company, accompanist. Address.....Mayne William E. Dever Dance Music.....Orchestra Address.....John T. McEwen, Car- tonist of The Chicago Tribune News Bulletin from The Chicago Tribune Dance Solo.....Eileen Dennis Baritone.....George G. Smith Address.....E. A. Burns, United States Supervisor of Radio Dance Music.....Orchestra</p>	<p>Address.....William M. Dwyer, Man- ager, Edgewater Beach Hotel Tennis.....Fred W. Akard Singer.....Bernard F. Robinson, The Diana Sings Soprano.....Dorothy Converse Dinner Music.....Orchestra News Bulletin from The Chicago Tribune</p> <p>Midnight to 1:00 A. M. The following theatrical, opera and radio-drama will take part in a spe- cial three hour program to be announced as they appear. R. M. Graggolo, Edna Bennett, Her- man Greenberg, of the "We've Got to Have Money" company, Carl Wheeler, Taylor Helms of "The Nervous Wreck" company, Harris theater. Gregory Kelly, readings: Olga Dick- son, company; James B. Cannon, monologues; Robert Gray, monologues; Martha Thorne, monologues of the "Little Jewel James" com- pany, Gailie theater. Soprano: Tracy and Victoria Osburn of the "New Toys" company, The Play- house, dialogue. Alma Toward of the "Eve and Topsy" company, Selwyn theater, Miss Mar- guerite Paulson, accompanist, Central. All Bernard and Russell Robinson, "The Three Sings," rock. Richard Dalt, rerun of the George White's Scandals company, Illinois thea- ter. Frederick Tiden, address in behalf of Otis Skinner, Rupert Graves, musical di- rector, Walter Moore, Harold Primus.</p>	<p>Rachel Harrison, Olga Travers, Mar- guerite Paulson, Marie Stevens of the "Diana Sings" company, Powers thea- ter. Jack Little and Tammy Mink, songs. Cambridge sisters, songs. Langdon Brothers, guitars. Harry Gene songs. Miss Davis, songs.</p> <p>1:00 A. M. to 5:00 A. M. Special program for Australia and New Zealand listeners. The first hour of the program will be broadcast on a 448 meter wave length already announced through New Zealand and Australia terms. The second hour will be broadcast on a 370 meter wave length and the third hour on a 448 meter wave length. In addition to the musical program there will be greetings from The Chicago Tribune Cable Edge on the press of Aus- tralia and New Zealand; greetings by Captain Wardo Evans of the United States Navy to the British fleet on the Australian waters; greetings from the president of the National Association of Broadcasters in the radio face of Aus- tralia and New Zealand; greetings from the Australian High Commissioner to the United States and from the British Com- modore. 5:00 A. M. to 8:00 A. M. Alternate calls on a 448 meter wave length and listening periods for Chicago from New Zealand and Australian list- ening stations, especially 47A, which has made it will attempt to check for thirty minutes after WGN goes off. 47A will check on a 370 meter wave length.</p>
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The Chicago Tribune intends to maintain in its
broadcasting standards of entertainment and in-
struction worthy of the call letters WGN. Watch
The Tribune every day for detailed programs.

The Chicago Tribune

THE WORLD'S GREATEST NEWSPAPER

One of the first ads in *The Chicago Tribune* announcing WGN appeared on March 24, 1924. It reveals the station's roots as being WEBH, on 810 kHz (370 meters), in the Edgewater Beach Hotel. Popular mythology erroneously reports WGN was derived from station WDAP.

al institution. It could be received with ease across North America every night.

In October of 1936, WGN moved from the Drake Hotel to new studios in a building constructed especially for broadcasting, and adjoining the Tribune Tower. Studio One was a fully equipped luxury radio theatre that could accommodate and audience of 600.

The advent of television, in 1948, made

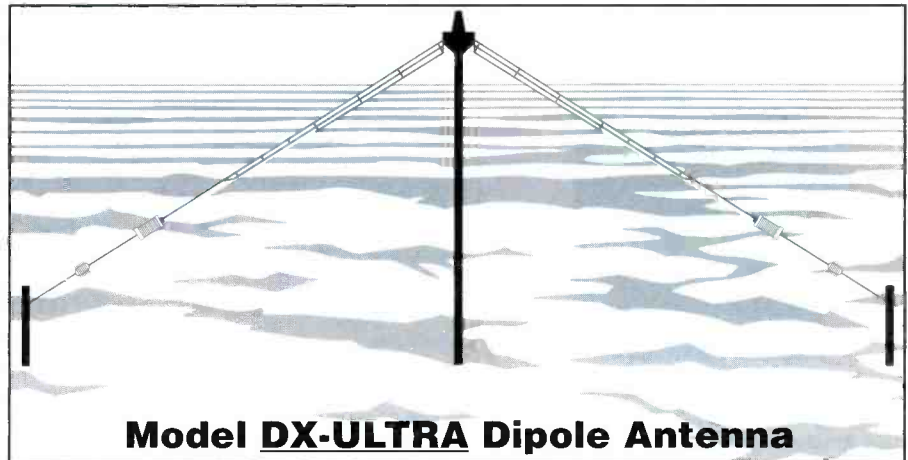
it clear that these studios had become inadequate. An addition was constructed to provide a total of 16 studios, some of which were both radio and television, while others were exclusively one or the other.

After that, the next move came in 1960. A new building was put up on Chicago's northwest side to house the television operations. WGN's radio operations remain in the Tribune Tower facilities.

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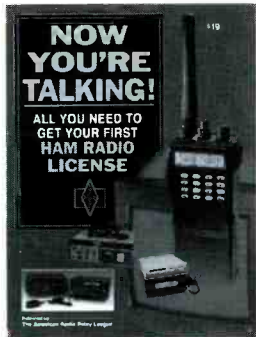
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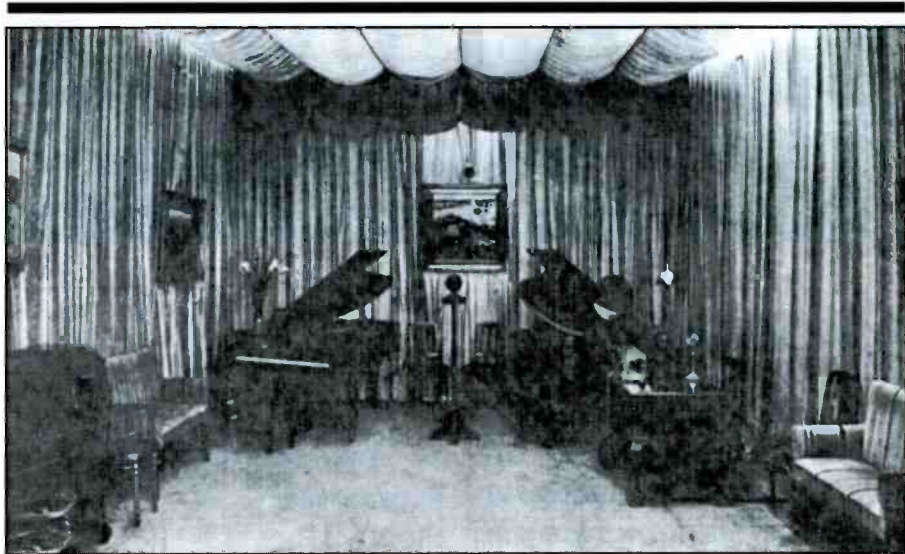
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WGN holds the title to many radio firsts. The Indianapolis 500, the Kentucky Derby, for instance. On June 28, 1925, history was made when the Scopes (Monkey) trial was broadcast live. Both the Republican and Democratic conventions marked other milestones.

WGN leads in many fields. It was first with a resident professional dramatic company, a Grand Opera company. The WGN Symphony Orchestra rivaled the Chicago Symphony. The station's staff wrote and produced its own musical and comedy shows, and conducted special events.

Among the radio talent first developed WGN were Sam and Henry (who later became Amos and Andy), Floyd Gibbons, Easy Aces, and Little Orphan Annie (based upon a Tribune comic strip). WGN soaps like *The Romance of Helen Trent* and *Just Plain Bill* were fed to CBS, and also syndicated on transcription disks.

The station had been broadcasting the Chicago Cubs baseball games for many years. Eventually, the Tribune purchased the team.

WGN was one of the founding stations of the Mutual Broadcasting System (MBS). MBS eventually grew to more than 500 stations. WGN left MBS in 1943 when the network's demands for WGN's time exceeded the station's desire to relinquish its local commitments.

WGN entered the FM market on March 1, 1941. The station was first known as W59C, then later became WGNB. The FM station was programmed separately with live and recorded music, however a few shows were simulcast. WGN decided to give up FM in the 1950's. A later acquisition (WFMT) became more of a problem than it was worth, and was donated to a public organization.

WGN continues on 720 kHz with 50 kW, and it's still owned by *The Tribune*. One of America's great stations.

Most of this information about WGN was thoughtfully provided by reader Roy R. Cone, of Chicago. Roy began in broadcasting in Madison, Wisc., at WIBA. Early in 1943, he joined WGN. On June 1, 1989, Roy retired as a WGN Engineer, after a 46-year career. The material Roy sent was taken from documents he collected, as well as his personal experiences.

Wow! What a career! What a station! What a reader!

Collectors' Corner

Collecting airchecks from stations and radio personalities is an aspect of the hobby that has many devotees in the broadcasting industry, and also with hobbyists. We saw a large 128-page catalog of nearly 2,900 airchecks available at reasonable

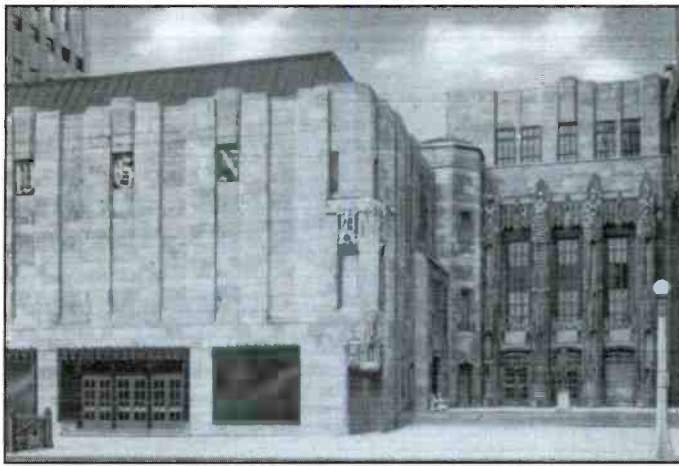
Station W-G-N, The Chicago Tribune,

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May 12 28 AM, 19*30*

Congratulations are extended!

This QSL card verifies reception of Chicago's WGN in May of 1930.



↑ Exterior of the Gothic styled WGN studios adjoining the Tribune Tower. This postcard view is from the late 1930's.

The first SETI experiment we found took place more than 70 years ago, but the Martians staunchly declined to speak. ➔

RADIO AMATEUR NEWS

Mars Refuses To Answer A Wave Length of 300,000 Meters Tried to no Avail

Nary a sound from neighbor Mars came over what was probably one of the most sensitive and long range receiving sets ever constructed to reward an all night listening-in vigil by two enthusiastic experimenters of Omaha, Nebraska.

With an instrument so sensitive that without any antenna it picked a message from Arcturus, 34 million miles of

prices to collectors from radioman Ed Brouder, who is an avid collector, himself. Ed also sells an (approx.) ten minute demo aircheck cassette. The full catalog is \$10 from *Man from Mars Productions*, 159 Orange Street, Manchester, NH 03104. Phone (603) 668-0652. Check with him for further information. Be sure to mention you're a POP' COMM reader.

People who wish to collect classic radio programs for their entertainment content or historic value often write in asking for information. This isn't an area in which we have much experience, however a reader submitted a news clipping telling about the *Friends of Old Time Radio Convention* held in the fall every year.

This event might possibly be sponsored

by a club or organization, and would certainly be of interest to anyone pursuing tapes of classic programs of the 1930's to 1950's. The only name and address in the story is possibly someone who might be in a position to provide additional information on the existence of a club, or know when another convention will occur. We suggest enclosing a stamped, self-ad-

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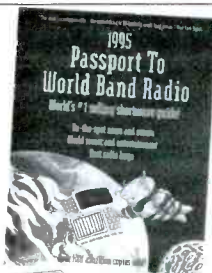
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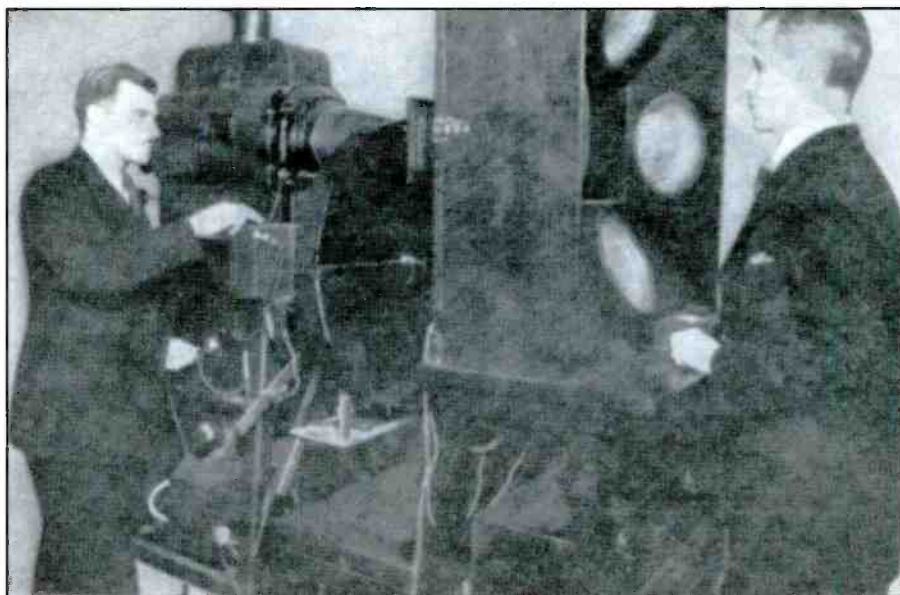


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CIRCLE 88 ON READER SERVICE CARD



In 1929, CBS had it's TV station in New York City, W2XBS, operating on a regular nightly schedule. That's Dr. A.N. Goldsmith (left), the Chief Engineer, aiming the lights on scanning disc camera at the evening's star.

dressed return envelope with any inquiry. That person was: Jay Hickerson, Box 4321, Hamden, CT 06514.

Searching the Cosmos for Signals

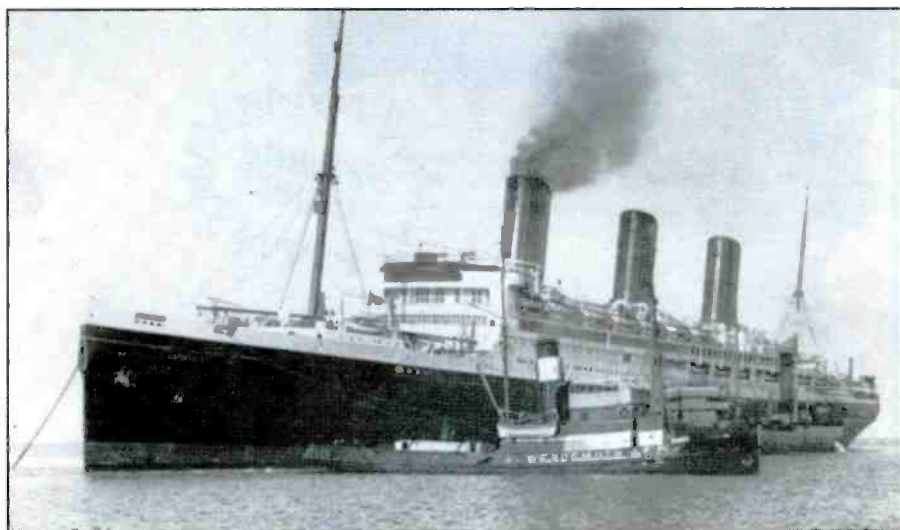
In 1932, Karl Jansky, of Bell Telephone Labs, in N.J., began listening for radio signals from the cosmos. Illinois ham operator Grote Reber constructed the first backyard radio telescope in 1937. He discovered and charted naturally occurring radio signals being emitted from specific points in the Milky Way Galaxy. Jansky and Reber are always credited with being the first to tune the cosmos for signals. But wait!

Search For Extra-Terrestrial Intelligence

(SETI) has become a part of the technology that has been given considerable media coverage. During the past 35 years, beginning with *Project Ozma*, several elaborate projects have been proposed, started, even actually conducted to scan millions of frequencies in the hope of detecting deliberately transmitted signals from distant civilizations.

While doing some research, we stumbled across something that was news to us. It moved cosmic radio monitoring and SETI's starting date back to a point 75 years ago. The May, 1920, issue of *Radio Amateur News* carried the story. RAN was the direct predecessor to, and original name of *Radio News* magazine.

This SETI test was amazing. It came



The Majestic was the largest ship in the world until 1935.

about because of the popular belief at the time that the apparent "canals" seen at times on Mars indicated the probable existence of intelligent life there.

On April 22, 1920, the orbit of Mars placed it at an exceptionally close point to our planet. That's when the SETI experiment began. Dr. Frederick H. Millener, and Harvey Gaimer, both of Omaha, Nebr., had established an extensive monitoring station just for this purpose. This was a dozen years before Karl Jansky came along.

Their station was reported in RAN as being "probably one of the most sensitive long range receiving sets ever constructed." The antenna consisted of no less than 30 miles of wire. According to the report, their equipment could tune from 1 kHz, to above 20 kHz. Although it wasn't explained why, their intention was to concentrate their first efforts in the 17 to 20 kHz range for picking up signals from the Martians.

Monitoring began at 8 p.m. They found that radio was so sensitive that, even without its antenna connected, it could receive Naval station NAA at Arlington, Virginia. With the big antenna in use, they could copy stations in Mexico, and Berlin. The problem was that the static was so terrible, their efforts had to be suspended. By 2 a.m., things quieted down. That's when they hooked up the gigantic longwire antenna again and got down to the business of SETI.

As they later reported, "That took us out into outer space beyond anything that might be taking place on earth. There was the most deathly silence. We concentrated our faculties to catch the faintest sound, but there was nothing; nor was the silence broken, even by static, during the entire time we had the long wave length hooked on."

For three hours they tuned, expanding the search to include a widening swath of frequencies. No signals from outer space were observed. When they tuned above 20 kHz, messages from terrestrial stations were picked up.

This story in RAN was headlined, "Mars Refuses to Answer." You might think this was a facetious observation, but it wasn't. The February issue of the publication had exhorted its readers to listen to the cosmos to hear messages from extra terrestrial civilizations. It's doubtful they would have made fun of this serious attempt by Millener/Gaimer. Obviously, RAN believed the Martians were there and were sending radio messages towers us, but we simply had not figured out how or where to listen for them.

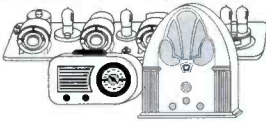
Two forgotten and unsung pioneers. It was time to set the record straight.

Early Television

Didn't want anybody to think these pages ignore early television, so let's spotlight some notable pioneering stations.

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Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
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27.315	1.95	57
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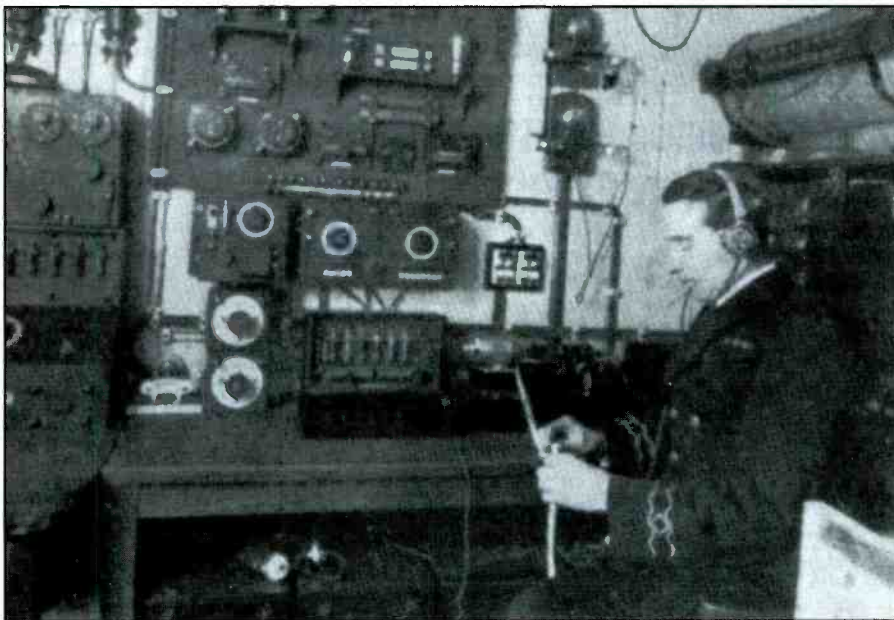
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Radio shack aboard the *Majestic* in 1923. The DF unit is at the far left. The Sparks is receiving a message on the high speed automatic telegraph gear.

effort was operating on a nightly two-hour nightly schedule in 1929. The 5 kW station utilized the frequency band from 2000 to 2100 kHz to transmit its video. The pictures were created by the scanning disk system and were 60 scanning lines high, 72 elements wide. No audio was transmitted. W2XBS was run under the direction of Dr. A.N. Goldsmith, Chief Engineer.

At the same time, Jenkins Labs, of Washington, D.C. was licensed to operate

several scanning-disk television stations, including W3XK at Silver Spring, Md. Their most interesting television license in 1929 was W10XU, on 2000 to 2100 kHz, which was licensed for operation in an aircraft.

Perhaps the oddest television experiment in 1929 was conducted by Dr. Paul A. Kober of the United States Radio and Television Corp. On the top floor of the Bamberger Dept. Store, Newark, N.J., Kober demonstrated the feasibility of transmitting motion

pictures a distance of 100 feet using ultra-violet waves instead of the more commonly used portions of the electromagnetic spectrum as the transmitting medium.

He claimed that the system had a potential transmission of 25 miles, but with the disadvantages of being directional and unable to penetrate obstructions. Nevertheless, he was of the opinion that the transmission method would have importance in certain applications.

So far we haven't thought of any, but it was an experiment worth trying, anyway.

Floating Showplace

Until 1935, the largest ship in the world was the liner *Majestic*. The vessel was constructed in Hamburg, and launched, partially completed, as the *S/S Bismarck* in 1914. She was 936 feet long, with a 100-foot beam. The vessel was designed to accommodate 750 First Class passengers, 545 Second Class, 850 Third Class, plus a crew of 1,000.

World War I interrupted the completion of this ship. When the war ended, Germany agreed to hand over the ship to Britain for completion. In August of 1922, the ship was launched flying the Union Jack, as the White Star liner *Majestic*.

The *Majestic* went into regular service between Southampton and New York, and served in that capacity for Cunard White Star until February of 1936.

The *Majestic* was always updated with the latest technological devices. Upon first going to sea, in 1922, it had a beautifully equipped radio shack.

The *Majestic's* call letters were GFWV (and G2IV). The vessel was equipped with high speed machines capable of transmitting and receiving CW at 80 w.p.m. High speed equipment was needed because 25 w.p.m. manual telegraphy could not handle a sufficient amount of traffic. The radio room had to meet the personal and business communications needs of the more than 3,100 passengers aboard, plus the safety and logistic requirements of the *Majestic* itself.

The high speed receiving equipment was also used for copying press bulletins sent out by RCA's powerful station WCC, Chatham, Mass. This information was utilized in the ship's daily newspaper.

In 1936, the *Majestic* was sold for scrap, but then saved and refitted as a domestic stationary WWII training ship for 2,000 troops. It was renamed the *HMS Caledonia* at that time. In 1939, plans were made to retrofit the vessel as a transport, but it burned out and sank in shallow water. In 1943, the wreck was towed away and broken up for scrap.

That winds us up for February. The support and participation in these pages by readers is welcomed and appreciated. Always looking for news stories, old QSL's, station listings, old station photos and post card views, memories, anecdotes, etc. ■

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TIRED OF TOYS? The **VX-100** crystal-controlled miniature FM transmitter uses **surface mount technology** to let you hear every sound in your home up to 2 miles away on any programmable scanner or VHF surveillance receiver! The complete device is only slightly larger than a 9V battery **with the battery installed!** The **VX-100** is sensitive enough to pick-up a whisper from across a large room and is **guaranteed** to outperform VHF surveillance transmitters selling for hundreds of dollars. RF power is **100mW output** with a 9V battery for long range even under adverse conditions. Automated assembly of surface mount components and **simple 5 minute assembly** by the user allows the price of the **VX-100** to be a fraction of the cost of even lower quality units. Assembly consists of attaching 3 wires to the transmitter module. Each unit is pre-tested, pre-aligned and comes complete with instructions and a **30 day unconditional moneyback guarantee!** Use it for a month. If you don't like it for any reason, return for a courteous refund. The **VX-100** is available on 3 surveillance transmitter frequencies; **A** 139.970MHZ, **B** 140.00MHZ, **C** 139.940MHZ. Channel **B** shipped unless otherwise specified. Custom frequencies available by special order. Only **\$79.98 + \$2.00 S&H** or buy **2 for \$75 each** with free S&H. VISA, MC, MO. for immediate shipping. **COD orders add \$5.00.**

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CIRCLE 82 ON READER SERVICE CARD

Weather Stations/Scanners/CB



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Weather Stations

Now you can be your own weather reporter with the Davis Weather Monitor II. Our top-of-the-line weather station combines the most advanced weather monitoring technologies available into one incredible package. Glance at the display, and see wind direction and wind speed on the compass rose. Check the barometric trend arrow to see if the pressure is rising or falling. Push a button, and read indoor and outdoor temperature, wind chill, humidity and barometric pressure. Our package deal includes the new ultra high resolution 1/100 inch rain collector part #7852-K, and the external temperature/humidity sensor, part #7859-K. The package deal is order #DAVI-K for \$479.95 plus \$15.00 shipping. If you have a personal computer, when you order the optional Weatherlink computer software for \$139.95, you'll have a powerful computerized weather station at an incredible price. For the IBM PC or equivalent order part #7862-K. Apple Mac Plus or higher including PowerBook, order part number 7866-K.

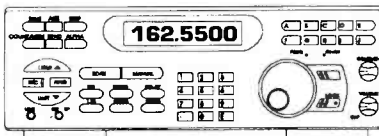
The Weather Monitor II (7440-K)
comes complete with anemometer with 40 feet of cable, external temperature sensor with 25 feet of cable, junction box with 8 feet of cable, AC power adapter, detailed instruction booklet and one year limited factory warranty.



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Bearcat Scanners

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Bearcat 760XLT-K base/mobile	\$198.95
Bearcat 700A-K info mobile	\$148.95
Bearcat 560XLA-K base/mobile	\$83.95
Bearcat 220XLT-K handheld	\$228.95
Bearcat 200XLT-K handheld	\$198.95
Bearcat 178XLT-K base/WX alert	\$133.95
Bearcat 148XLT-K base/WX alert	\$88.95
Bearcat 80XLT-K handheld	\$168.95
Bearcat 60XLT-K handheld	\$88.95
Bearcat BCT7-K info mobile	\$168.95
Bearcat BCT2-K info mobile	\$138.95



Bearcat® 890XLT-K Radio Scanner
Mfg. suggested list price \$399.95/CE price \$228.95
200 Channels · 10 banks · Weather Alert Feature
Turbo Scan · VFO Control · Priority channels
Auto Store · Auto Recording · Reception counter
Frequency step resolution 5, 12.5 & 25 KHz.
Size: 10-1/2" Wide x 7-1/2" Deep x 3-3/8" High
Frequency Coverage:
29,000 - 54,000 MHz (NFM), 108,000 - 136,995 MHz (AM)
137,000 - 173,995 MHz (NFM), 216,000 - 224,995 MHz (NFM),
225,000 - 399,995 MHz (AM) 400,000 - 512,000 MHz (NFM),
806,000 - 823,9875 MHz (NFM), 849,0125 - 868,9875 MHz (NFM)
894,0125 - 956,000 MHz (NFM).

The new Bearcat 890XLT gives you pure scanning satisfaction with amazing features like Turbo Scan to scan and search up to 100 channels per second. This base and mobile scanner is ideal for weather watchers because it has a built-in tone activated **Weather Alert Feature**. Other features include **Auto Store** - Automatically stores all active frequencies within the specified bank(s). **Auto Recording** - This feature lets you record channel activity from the scanner onto a tape recorder. You can even get an optional **CTCSS Tone Board** (Continuous Tone Control Squelch System) which allows the squelch to be broken during scanning only when a correct CTCSS tone is received. For maximum scanning enjoyment, order the following optional accessories: **PS001** Cigarette lighter power cord for temporary operation from your vehicle's cigarette lighter \$14.95; **PS002** DC power cord - enables permanent operation from your vehicle's fuse box \$14.95; **MB001** Mobile mounting bracket \$14.95; **BC002** CTCSS Tone Board \$54.95; **EX711** External speaker with mounting bracket & 10 feet of cable with plug attached \$19.95. The BC890XLT comes with AC adapter, telescopic antenna, owner's manual and one year limited warranty from Uniden.

CB/GMRS Radios



A National Weather Service (NWS) receiver with automatic emergency broadcast activation has been added to the legendary Cobra 29 CB radio. The integrated NWS receiver in the Cobra 29LTDWX will automatically activate to receive emergency announcements about severe weather and travel conditions. A special tone-alert signal broadcast by the NWS activates the weather receiver and overrides any CB radio reception for monitoring the warning message. Cobra 29LTDWX-K CB/Weather Alert ... \$129.95
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Cobra HH40-K CB 40 ch. Handheld \$99.95
Ranger RC12970-K 100 watt 10 meter. \$369.95
Ranger RC12950-K 25 watt 10 meter \$244.95
Uniden GMR100-K GMRS Handheld \$159.95
Uniden WASHINGTON-K SSB CB Base ... \$189.95
Uniden GRANTXL-K SSB CB Mobile \$139.95
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CIRCLE 28 ON READER SERVICE CARD

Talking Weather

Now your weather station can talk to callers. Call 313-994-9000 for a demonstration. The Talking Weather Station (TWS) from Innovative Tech Works, lets anyone phone your Davis Weather Monitor II and hear the weather. Here's how it works. You setup the TWS with most IBM PC 80286 or faster compatible computers with a 40 MB hard disk. Requires MS-DOS version 5.0 or later with 1 MB of RAM. Add phone lines and your own personal messages or promotional advertising. Callers are automatically greeted with your voice giving them the weather and your message. Several times a minute, the TWS software will poll the Weatherlink and will update the voice library files to make your spoken report. A single line card, order #ITI-K is only \$489.95. A two line card is order #IT2-K for \$939.95. A complete turnkey system for commercial use is available, order #ITPRO2-K starting at \$3,999.95.

VHF Transceiver

RELM® WHS150-K Transceiver

Mfg. suggested list price \$481.67/CE price \$339.95
Severe weather spotters depend on the RELM WHS150 transceiver for direct two-way communications with their police or fire department, civil defense agency or ham radio repeater. The WHS150 is our most popular programmable five watt, 36 channel handheld transceiver that has built-in CTCSS, which may be programmed for any 39 standard ELA tones. Frequency range 148,000 to 174,000 MHz. Will also work 144,000-148,000 with slightly reduced performance. The full function, DTMF compatible keypad also allows for DTMF Encode/Decode and programmable ANI. Weighing only 15.5 oz., it features dealer program mable synthesized frequencies either simplex or half duplex in both 5.0 and 6.25 KHz. increments. Other features include scan list, priority channel, selectable scan delay, selectable scan time-out timer and much more. When you order the WHS150 from the Weather Bureau, you'll get a complete package deal including antenna, battery, belt clip and user operating instructions. Other accessories are available. A leather carrying case with swivel belt loop part #LCWHS is \$49.95; rapid charge battery charger, part #BCWHS is \$69.95; speaker/microphone, part #SMWHS is \$54.95; extra nicad battery pack, part #BP007 is \$39.95. The radio technician maintaining your system must order programming instructions part #PI150 for \$18.00 to activate this radio. FCC license required for United States operation.

Other neat stuff

Grundig Satellit 700-K portable shortwave receiver with 512 memory & AC adapter	\$389.95
Grundig Yacht Boy 400-K digital portable shortwave receiver - 40 memory presets	\$199.95
Grundig Yacht Boy 230-K portable shortwave receiver	\$139.95
Sangean ATS800-K portable 20 memory shortwave receiver	\$69.95
Sangean ATS803A-K portable shortwave receiver w/AC adapter - 9 memory presets	\$148.95
Sangean ATS808-K portable 45 memory shortwave receiver	\$159.95
Sangean ATS818CS-K portable shortwave receiver with cassette recorder	\$209.95
Uniden EXP9200-K 900 MHz 2 line cordless phone	\$289.95
Uniden EXP9100-K 900 MHz 2 line cordless phone	\$269.95
Cobra CP212-K 900 MHz spread spectrum cordless phone	\$249.95
Bogen PR2000-K Digital two-line advanced voice mail system & answering machine	\$279.95
Bogen PR018-K memory expansion module, doubles recording time to 36 minutes	\$79.95
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Buy with confidence

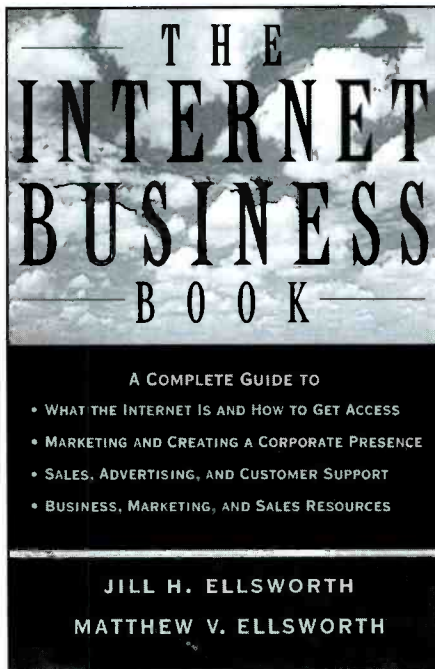
It's easy to order from us. Mail orders to: Communications Electronics Inc., Emergency Operations Center, P.O. Box 1045, Ann Arbor, Michigan 48106 U.S.A. Add \$15.00 per radio or telephone product for U.P.S. ground shipping and handling in the continental U.S. unless otherwise stated. Add \$10.00 shipping for all accessories and publications. Add \$10.00 shipping per antenna. For Canada, Puerto Rico, Hawaii, Alaska, P.O. Box, or APO/FPO delivery, shipping charges are two times continental U.S. rates. Michigan residents add state sales tax. No COD's. No returns or exchanges after 31 days. 10% surcharge for net 10 billing to qualified accounts. All sales are subject to availability, acceptance and verification. Prices, terms and specifications are subject to change without notice. We welcome your Discover, Visa, American Express or MasterCard. Call 1-800-WX-BUREAU to order toll-free. Call 313-996-8888 if outside the U.S.A. FAX anytime, dial 313-663-8888. For technical assistance to solve your communications problem, call the Communications Electronics technical support hotline for \$2.00 per minute at 1-900-555-SCAN. Scanner Distribution Center and CEI logos are trademarks of Communications Electronics Inc. Sale dates 1/1/95 - 3/31/95. AD #115946GB. Copyright © 1995 Communications Electronics Inc.

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BOOKS YOU'LL LIKE

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Selling in Cyberspace

The millions of daily Internet users comprise a vast market that can purchase items using the information superhighway. Marketers are chomping at the bit to reach this enormous audience. However, inasmuch as the Internet grew out of academia, doing business is a sensitive topic. Violating Internet taboos and ethics can literally destroy a businesses' reputation. Working within certain guidelines, however, can produce excellent results.

For companies seeking to connect with the Internet, *The Internet Business Book*, by Jill Ellsworth, Ph.D., offers a full explanation of all business operations that may be conducted on the Internet. Not only that, the 352-page illustrated book has step-by-step instructions for everything.

This book includes a practical user's guide to doing market research, and making sales on the Internet. Shows how to pick the right Internet service provider to meet your company's needs. Explains how to use the Internet to accept orders from customers around the world, and then fulfill them. For newcomers, there's an explanation of exactly what the Internet is, and how to gain access to it.

Written by an Internet insider, this is a well done and information-packed communications resource for businesses. It shows how to safely negotiate the somewhat tricky Internet protocols in order to safely and effectively conduct business.

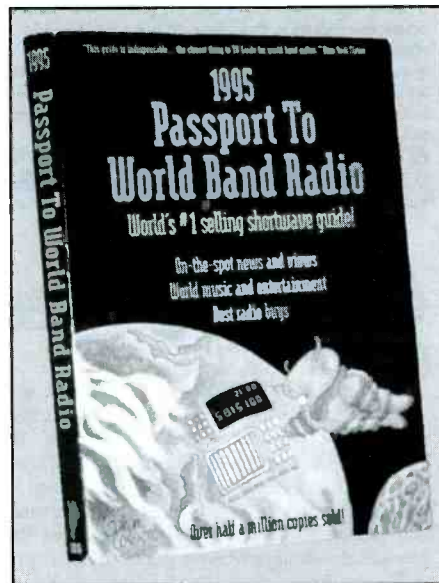
The Internet Business Book is \$22.95

(\$29.95 Canadian) from John Wiley and Sons, Inc., 605 Third Ave., New York, NY 10158. Telephone: (212) 850-6000.

Your Shortwave Passport to the World

The 1995 edition of the *Passport to World Band Radio* continues its tradition of being the SW broadcast listener's reliable old friend, providing frequencies, skeds, and equipment reviews.

The new edition runs to 536 pages, about half of which are occupied by the valuable *Blue Pages* frequency chart section. This section lists every international shortwave broadcast frequency in use between 2300 kHz and 26 MHz. Each frequency is shown with the names of all stations using it. The charts show every hour of the day and night, including the language used, if the signals are jammed, the stations' identifications, and other relevant information. Nothing else like it is available from any other source.



You also get equipment reviews of the hobby's most popular receivers, plus interesting features. There's an English language broadcast listing, a station-address section, a feature on buying a receiver, one on understanding international time, and others. We liked the listing of 1995's Ten Top Shows.

Passport to World Band Radio is the one reference source that all shortwave broadcast enthusiasts anxiously await each year. The 1995 edition will easily satisfy every listener.

Passport to World Band Radio, 1995 Edition, is nationally available from many dealers in shortwave books and/or radios. Check with POP'COMM advertisers.

Antennas for Monitoring Shortwave

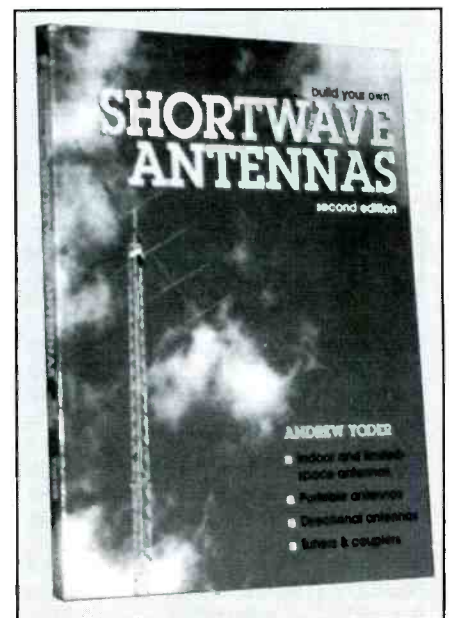
A wise man once supposedly said he'd rather have a poor receiver with a great antenna system than a great receiver with a poor antenna. If he never said it, he should have.

Build Your Own Shortwave Antennas, 2nd Edition, by Andrew Yoder, puts at your fingertips the information you need to build your own great shortwave antennas in order to maximize DX reception.

The new edition of this 206-page fully illustrated book covers more types of antennas, and ones for the newer portable and inductively coupled receivers. Andy Yoder furnishes clear instructions and dozens of diagrams and photos to demonstrate how to easily build a variety of inexpensive, yet effective, antennas and masts.

Included in Yoder's offerings is an antenna made from window screening. He has a longwire type intended to be hoisted aloft from a kite. There's a reel antenna made from a chalk line case, and a multiband dipole with a single feedline. The book has portable antennas, makeshift antennas, masts, slopers, inverted-V's, verticals, quads, as well as hidden antennas, indoor types, and ones intended to fit limited space requirements. They're all here.

There's more. The book explains how



to select the best type of antenna to meet your needs, then how to safely and efficiently construct it. It discusses the various parts of an antenna, and the tools needed to put one up. You'll learn about grounding and lightning protection, as well as eliminating interference.

The antennas in Andy Yoder's book are all tried-and-proven winners. The primary ingredient in most of these is wire. None are exotic *thingamajigs* that cost a fortune and require an engineer to figure out. In fact, every measurement you will need has been calculated and contained in Andy's straightforward instructions. He makes it easy. If you tune between 1600 kHz and 30 MHz, there are antennas here you can use.

In addition, there's a glossary, and large list of suppliers.

Andy Yoder, an active DX'er, has written for *POP'COMM*. You'll like his book.

Build Your Own Shortwave Antennas, 2nd Edition, is \$16.95, plus \$5 shipping/handling (residents of NY State please add \$1.87 tax) from CRB Research Books, Inc., P.O. Box 56, Commack, NY 11725. Toll-free phone orders call 1-800-656-0056. Phone orders from Canada/AK/HI call: (516) 543-9169. ■

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You already know the popular 1300, and 220 stainless discons and the 1500 wideband fiberglass scanner base antennas - custom quality products from England! Now, in response to your requests and scanner accessory needs, we have expanded the SCANMASTER line with the addition of four new products! Each should prove to be the popular best sellers that SCANMASTER's original three models have become! Try one and see!



Double-discone

SCANMASTER DOUBLE-DISCONES BASE (ANT426)

Exclusive! This super high performance, ultra wideband, double discone is available only from Scanmaster! This one-of-a-kind product offers substantially higher gain and lower radiation angle compared with conventional designs. Same low VSWR, wideband transmit capability and heavy-duty stainless steel construction you've come to expect from Scanmaster discons!

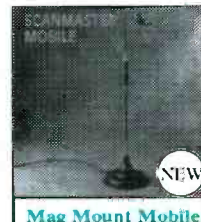
◆ Superior performance with almost twice the gain of conventional designs! ◆ Powerful wideband reception from 25 to 1300MHz. Plus high gain, low VSWR transmit from 80 to 1300MHz. ◆ Completely weather-protected, enclosed feedpoint with popular 50-239 UHF connector for cable connection. ◆ Complete with heavy-duty mounting pole, brackets and full stainless steel hardware

SCANMASTER MAG MOUNT MOBILE (ANT423)

A high-grade, complete and ready to go, magnetic mount, ultra-wideband mobile scanner antenna. One of the best we've seen anywhere, at any price! Super wideband performance with excellent reception from 100kHz to over 1000MHz!

◆ Sleek, classy flat black and chrome custom finish - looks great on today's cars!

◆ Compact! Only 18 inches tall overall, yet really pulls in the signals! ◆ Extra heavy duty magnet mount with thick, full coverage rubber 'boot' to protect your car's expensive finish. ◆ With 16 feet of high quality RG58/U co-axial cable complete with attached BNC connector-ready for direct connection to your favorite scanner.



Mag Mount Mobile

QS200 MOBILE HANDHELD HOLDER (RIG4997)

Now, quickly and conveniently mount your handheld scanner or amateur HT in your car! The Scanmaster QS200 holds your radio firmly in position, yet is easily and quickly removed for security!

◆ Unique, fully adjustable vertical or horizontal mounting clips let you find that perfect "sweet spot" that's just right for mounting in any car! ◆ Custom rubber padded mounting backplate will not damage or mar your scanner's finish.

◆ Universal - Fits virtually all handheld scanners and Ham band HT's. Simple attachment with handheld's belt clip!



Mobile HT Holder

QS300 ADJUSTABLE DESK TOP BASE STAND (RIG4999)

This heavy-duty, fully adjustable custom desk-top radio stand is perfect for home 'base station' use of all handheld scanners and Ham band HT's! Rubber padded handheld mounting plate will not mar your expensive radio's finish.

◆ Unique, user friendly design is fully adjustable in both the vertical and horizontal planes and allow you to position your handheld "just the way you like it." ◆ Base section has built-in 50-239 UHF connector, for external antenna attachment with a 14 inch high quality co-axial cable jumper with BNC connector for convenient attachment to the handheld.



Desk Base Stand

S
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CIRCLE 68 ON READER SERVICE CARD

We Review: AOR AR-8000

A High-Tech Portable Receiver/Scanner

It seems that just when you think technology has reached new heights, out comes another high-tech receiver that surpasses your wildest dreams. Such is the case with the new AOR AR-8000 Wide Range Receiver. The 1,000-channel AR-8000 is a scanner and portable shortwave receiver; a user-friendly handheld radio with a new surprise at every turn.

Overview

Since the AR-8000 is no ordinary receiver, the operating manual is not your often-typical "open the box, charge the batteries, don't-need-to-read-it manual." The easy to read, 100-plus page manual **MUST** be read to get the full advantage from the receiver, and to actually learn how it operates.

Let's talk about the AR-8000's many features. The front panel has a total of 20 push buttons and an extra large backlit LCD screen (more about that later). It looks a bit like a mini-TV screen sandwiched between the speaker and keypad. The multi-purpose keypad allows you to enter frequencies, search limits, mode, attenuator, passwords, select one of the two VFOs, scan, pass (lockout), search and much more.

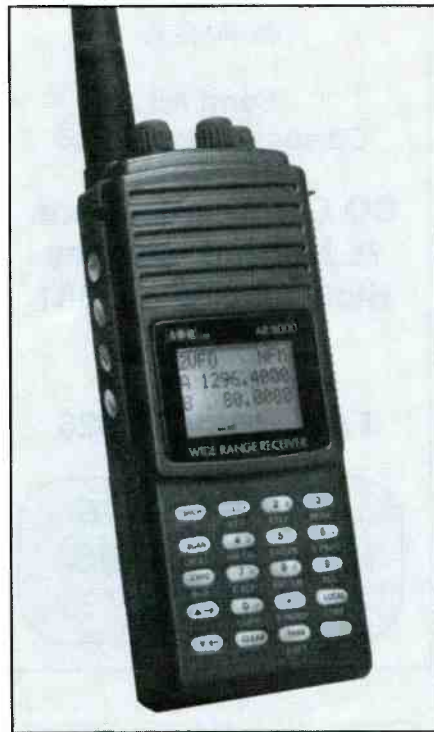
The top of the unit has three large rubberized rotary control knobs; power/volume, squelch and dial. The 3.5 mm earphone jack is also top-mounted. A BNC-mount flexible antenna (included) connects firmly to the top of the receiver.

The unit is powered from the supplied NiCd "AA" batteries or four standard "AA" alkalines (not included), or 12 VDC using the supplied cigarette lighter cord.

The left side panel controls are (from top to bottom) the function, monitor, lamp and key lock push buttons. All the push buttons (including these side panel ones) are well lighted at the simple press of the "lamp" button. By pressing "function" then "lamp" the light remains on until "lamp" is pressed again. A nice feature!

The AR-8000 is the ideal handheld size for most users who want a compact full-featured receiver, yet doesn't require pencil-thin fingers or jeweler's tools and a magnifying glass to operate!

The list of the unit's features reads like a hobbyist's wish list: frequency coverage is 500 kHz to 1900 MHz, all mode (AM, FM, USB, LSB and CW) reception, 1,000 memory channels, 20 search banks, priority channel, frequency pass, rotary tuning dial, programmable (50 Hz to 995 kHz) step sizes, scan/search speeds up to 30 increments/sec., signal strength meter, band



scope, backlit LCD, battery save function, attenuator, keypad beep on/off, keypad lock, monitor switch, password-protected banks, programmable scan and search including free, delay, audio level and mode, select scan list, clone data facility (with optional interface) between two AR-8000's, computer control, and EEPROM memory backup (no battery required).

The supplied belt clip, carrying strap, and charger complete the picture.

Operating the AR-8000

No doubt about it, this is a unique receiver. So unique in fact, that we couldn't possibly review everything about the unit, so we'll consider these main points: How well it performs, how easy it is to use, and how useful are some of the more high-tech features. Here goes.

We'd recommend while learning the operation of the unit, that you select "new-user" status. More experienced users may find the expert status more to their liking, but even so, we'd recommend starting at the beginning!

After charging the NiCds overnight (the manual recommends a 16 hour charge before initial operation), the unit was ready to operate. The high visibility LCD has four lines of 11 characters. You can "name" memory channels or search banks with up to seven alphanumeric characters. For example, you may wish to "name" the chan-

nels with certain aircraft frequencies as "APPR" meaning an aircraft approach frequency. No need to remember what the bank includes, just give it a label!

One nice feature of the AR-8000 is the simple thoughtful number of channels per bank. There are 50 per bank, not 100. Many users will find it easier to program 50 similar frequencies than 100.

The microprocessor brain of the unit, in addition to the users manual, helps guide you through various programming steps, and lets you know what the unit is doing, too. Let's take simple frequency entering, for example. Appropriately, when entering a sequence of numbers, before pressing the "enter" key, the bottom line in the LCD window shows "freq set" indicating the unit is expecting frequency data. When scanning, the display shows the user "scan," the bank, channel number, frequency and any seven-digit alphanumeric text the user selects to help in identifying the channel. Typical examples might include "fire," "marine," etc.

With the supplied rubber duck antenna, our AR-8000 received VHF/UHF public service, federal, aircraft and 800 MHz stations with ease. Connecting an external discone antenna provided excellent reception with little overload from nearby transmitters.

The audio level was more than adequate, and is crisp and clean.

Depending on the volume setting and use of the lamp function, the four provided "AA" NiCd batteries will give you varying amounts of listening time. We used the receiver at a comfortable listening volume, and every few minutes turned on the lamp for a while. Doing this, our unit gave us about four-and-a-half hours of operation. Use the AR8000 at lower volume, you'll get longer operation, high volume, less. Use the lamp frequently, or leave on continuously, you'll get much less operating time.

The manual, while well written, would be even better with short title blurbs at the top of each major section, making it a bit easier for a user to quickly find a needed section. We suggest you write in your own quick-find titles at the top of specific pages.

The AR-8000 was able to pick up distant signals and also able to separate a weaker signal from a more powerful one on a nearby/adjacent frequency. We first tuned to a powerful AM station on 970 kHz. Incidentally, we found the ease of frequency enter, step increment changing, and other functions relatively easy to accomplish. The feel of the keypad is firm and

(Continued on page 82)

TELEPHONES ENROUTE

BY TOM KNEITEL, K2AES

WHAT'S HAPPENING WITH CELLULAR, MARINE & MOBILE PHONES

An anonymous Canadian reader passed along information about the launch (this April) of Canada's MSAT satellite. The communications satellite will be placed in a geostationary orbit at a point 36,000 km above the equator. This will provide for 1,800 channels of voice, FAX, data, and video.

By July, MSAT will provide trunked communications to land mobile radio services, especially in remote areas of Canada. Small dish antennas will be used. MSAT will also fill in the cellular dead coverage spots in Canada's remote areas.

MSAT is being operated by Glentel Inc., of Burnaby, B.C., Canada. Later this year, a second (but similar in its purpose) satellite will be launched by the American Mobile Satellite Corp.

Trevor Fletcher, of Edmonton, Alberta, Canada, sent us a clipping of William Rayner's entertaining column. The column seems to be taken from Victoria, B.C. newspaper. In it, Rayner enumerates various cellphone uses that are either dangerous or annoying, or a combination of both.

Rayner is particularly annoyed by people who use cellphones mainly to attempt to get others to notice them and think they are important. He cites the example of the time he was in a crowded elevator of a high-rise hotel. A "smirking lout," he reported, took out a phone and placed a call, saying loudly, "Hi, I'm in the elevator going up to my room. I'll call you back when I get there. Okay, bye."

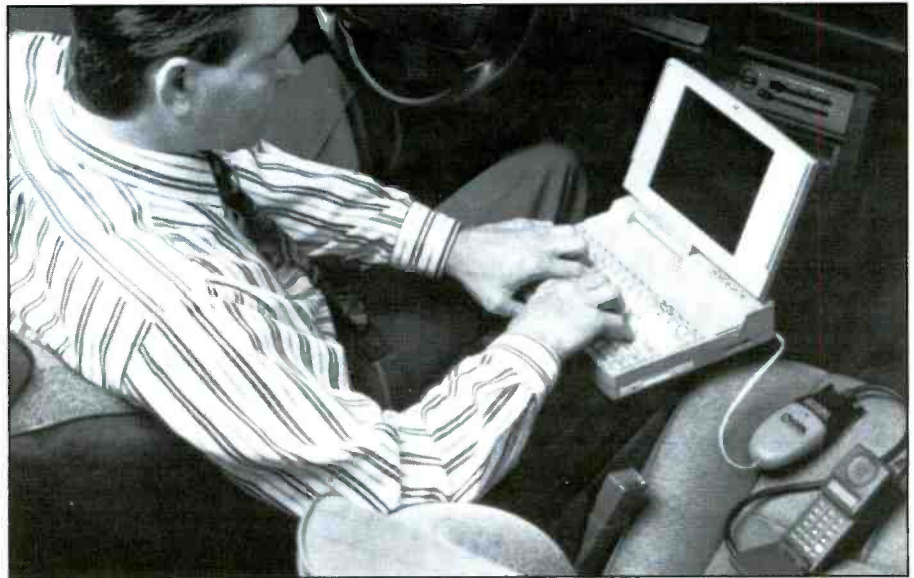
Sure it's annoying, but there's no box office to deal with before you enter an elevator. What about the "important" person sitting near you in a theatre who makes/receives calls during a movie or show?

Better 911 Cellphone Service Proposed

The FCC is proposing new rules that ensure cellphone users will be able to access 911 emergency services comparable to those currently available to most users of home and office wireline phones.

Cellphone users are increasingly seeking reliance upon 911 emergency services. FCC proposals look toward requiring cellphone service providers to offer real time voice capabilities that will make enhanced 911 services available to all subscribers. Enhanced 911 services include Automatic Number Identification (ANI), Automatic Location Information (ALI), Selective Routing (SR), and others.

Subscribers, under proposed new rules, would be able to access emergency services by dialing 911 without having to dial additional digits. Such callers could place 911 calls without meeting any mobile radio service user validation requirements. Calls to



ORA Electronics has a Cellular/Data Link that facilitates using a computer with a portable cellphone.



Panasonic's new FAX machine is mated to a 30-channel 900 MHz band cordless phone.

911 would be handled ahead of any other calls awaiting the availability of radio or network resources.

Cellular service providers would be required to furnish the information necessary for emergency service providers to locate a 911 caller using a mobile unit. Service providers must permit public service agencies to immediately return calls to mobile units that have placed 911 calls.

In addition, cellular equipment that cannot meet the performance criteria of new rules (should they ultimately be validated) would need to have a warning label stating that they provide only limited 911 access, along with a description of the limitations.

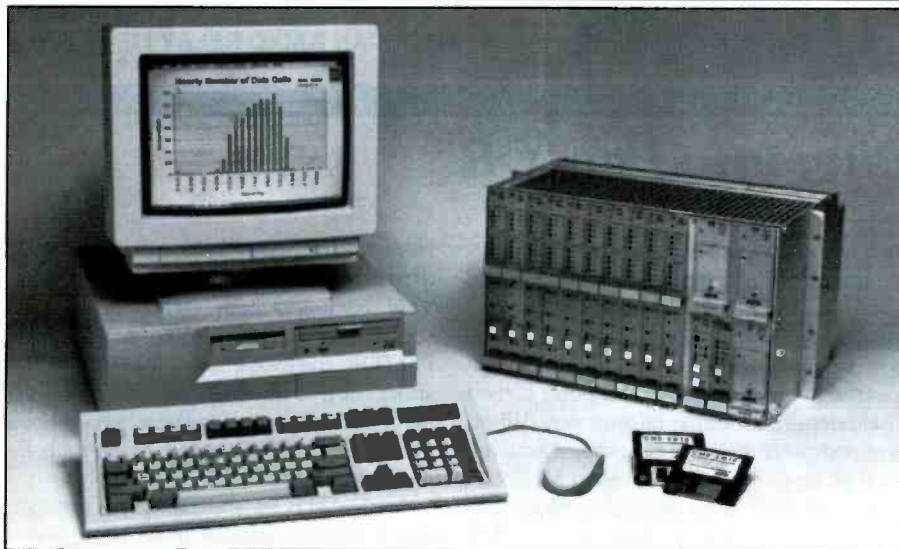
The FCC is on the right track with this concept! Hope it goes through soon.

Cellular service suppliers needing more information from the FCC can contact Suzanne Hutchings at (202) 634-1802.

Cellular/Data Link

The ORA Electronics Cellular/Data Link directly links any modem-equipped computer or FAX machine to a portable cellphone. The device offers consumers the freedom to communicate anywhere by enabling them to send and receive data or FAXes from their cellphones with the same ease and productivity as using a standard telephone line.

The device is completely transparent to the modem or FAX machine and works with all popular communications and FAX



Tracking cellular system usage is a snap with the CMRS.

software packages. It does not require additional software and may be used with any modem-equipped computer (PC, Mac, palmtop, etc.) or FAX machine with an RJ-11 interface.

The Cellular/Data Link is available for most portable cellphones, including: AT&T 3710/3730; AT&T 3760; Mitsubishi 3500/4000 or DiamondTel 20X/22X; Motorola 8000/9000 Series and equivalents; Motorola Microware T-A-C [Flip-Phones] and equivalents; NEC P200/P300, P201/P301 or Kenwood KMP-0H700; NEC P400/P600 or P401/P601; OKI 900/901, and OKI 1150.

Soon to be added: GE CT-700 or Ericsson TKA01; Mitsubishi DT100 (dual mode) or DiamondTel 25X (dual mode), and NEC P110/P120/P180.

Everything needed is included for instant use, including cables, cords, battery, and user's guide. The MSRP is \$249.95 from major retail outlets. It may also be obtained on a rental basis for \$30 per week from InTouch USA.

ORA Electronics is located at 9410 Owensmouth Ave., Chatsworth, CA 91313. Phone: (818) 772-2700. The phone number of the InTouch USA main office is (703) 264-1872. Local InTouch USA offices are in many cities across the nation.

900 MHz Cordless Phone/FAX Combo

Panasonic's new KX-F390 is the world's first integrated FAX with 900 MHz cordless telephone unit. In fact, it's the first FAX to be marketed in the USA to feature any type of cordless phone.

Panasonic designed the unit primarily for the home office and small to midsize business. The 30-channel cordless phone uses the 900 MHz band in preference to the more familiar 46/49 MHz cordless phone. The 900 MHz band provides this clear link, as opposed to conventional 46/

49 MHz systems that can at times be subject to interference from fluorescent lights, motors, various electric devices, and other nearby cordless phones.

The KX-F390 portable handset is versatile, and includes the capability of remotely controlling the base unit's messaging and FAX functions, plus intercom.

The MSRP of the Panasonic is \$1,149.95. It's offered by Panasonic's national dealer network.

Tracking Cellular Usage

To assist cellular service providers in planning and tracking their data markets, MPR Teltech Ltd. developed the Cellular Market Research System (CMRS).

CMRS net analysis is useful to cellular net planners and marketing personnel because it allows them to track customers' services helping to spot trends and patterns. With the analysis, providers can better match services and equipment to customer needs. They can also track how customers are responding to technological advances, such as direct-connect modems. The effects of in-house and competitor's marketing campaigns can also be monitored.

The CMRS classifies cellular calls into four separate categories: voice, FAX, computer data, and silence. Stats for each are generated on a PC, including the number of calls, as well as the average duration of these calls. Data files indicate when each call was made, how long it lasted, and what circuits handled the call. Summary files are also generated and can be graphed using standard spreadsheet software. Other indices can also be compiled to provide additional data, including remote monitoring of distant markets.

The CMRS is based upon MPR Teltech's SDU T1 trunk control cards that monitor 24 calls simultaneously, while a 19-inch SDU card shelf monitors up to 240 calls. Control cards feature a DSX-1 compatible



Audiovox adds new cellphones to its user-friendly Minivox line. This one is the MVX-425 portable.

T1 interface and internal fault monitoring to integrate easily into MTSO environment. E1 interfaces can be accommodated through trunk adapters.

More information? Contact Thor Berggren, Digital Products, MPR Teltech Ltd., 8999 Nelson Way, Burnaby, B.C., Canada V5A 4B5. Phone (604) 293-6135.

User Friendly

Audiovox Cellular introduced a new Minivox line of user-friendly portable cellphones. This series includes the MVX-450, MVX-425, and the Prestige version, PR-140. MSRP for these models are \$299, \$289, and \$279, respectively. The accessories are interchangeable with the entire Minivox Series, including the popular MVX 525 and MVX-700.

These cellphones are regarded as user-friendly because their function features are printed right on the keypad. Features include one-touch programmable emergency dialing, 30-number memory, and a number of calls in absence indicator. The units come with a travel charger. The battery provides two hours of talk-time and more than 18 hours of standby.

For more information, contact Audiovox Corp., 185 Oser Avenue, Hauppauge, NY 11788. Phone (516) 233-3300.

Thank you for stopping by. Please, let's hear from you again. Always on the lookout here for items relating to cellphones, air/ground phones, beepers, and cordless phones. We like news clippings, as well as information about new products and services being offered. Your input is always appreciated. ■

GETTING STARTED AS A RADIO AMATEUR

Plug into PacTOR

It isn't AMTOR and it isn't packet. PacTOR is a fairly new digital mode for HF operating that combines the best of both. Jeff Gold, AC4HF, of Cookeville, Tennessee, tells us how to get started: I had no idea what PacTOR or any of the other digital modes were all about. There certainly seemed to be a lot of interest and excitement about them, though. I'd often monitored local repeaters and heard hams talking about the packet bulletin boards on 2 meters and keyboard-to-keyboard communications on HF. It was a complete mystery to me.

One day a friend dragged me to his house to try some digital modes. First he connected to a 2-meter packet BBS and showed me how to tap its huge storehouse of information. I noticed that some posted messages were from other parts of the country—and even other parts of the world! My interest was piqued.

"That's nothing," he said. "Wait until you see what you can do with PacTOR on the HF bands." He pushed a button on a device that definitely didn't look like a transceiver and then turned on his HF rig. The device in question was a multimode terminal node controller or TNC. It was the interface between his computer and his HF radio. It's like a modem in the non-wireless computing world. It takes data from your computer and converts it to shifting audio tones for transmission by your radio. A TNC also converts received audio to data the computer can understand. It only took a minute for my friend to set up for PacTOR. He was using an old IBM-compatible computer with a monochrome monitor. The whole system cost \$200 at a local hamfest. He switched his radio to the 20-meter band and started to tune around 14.070 MHz. I heard strange-sounding signals and noticed that the LED display on his TNC was flickering. "That's the tuning indicator. Let me show you how it works." It was easier than I expected. All I had to do was tune until the flashing LEDs glowed on the left and right sides of the display. Sure enough, I saw text appearing on the monitor screen. It was an American ham having a PacTOR conversation with a Russian. My interest was more than piqued now!

I asked if I could make contact with another station. We tuned again, but couldn't find anyone calling CQ. He suggested that we put out a CQ of our own. The software he was using made it a breeze. He pressed

two keys and the TNC automatically started calling CQ at specified intervals. On the third CQ the computer began to beep. I panicked. Then I noticed that the answering station's call sign automatically appeared in an area on the computer screen that contained logging information. When the computer stopped beeping, it was my turn to type. The station was in Mexico. I ended up having an enjoyable 45-minute conversation. Despite noise and interference, PacTOR kept banging the information through!

Now I had to have my own PacTOR setup. After about a month, a local ham decided he wanted to sell his multimode TNC. It was almost brand new and supported packet, RTTY, AMTOR and other digital modes in addition to PacTOR. I drove over the next day and picked up my new toy. I didn't have a computer to dedicate to this venture, so I did a little research and I found that you can use a "dumb" data terminal. Although you can't use terminals to run sophisticated TNC software, it's an inexpensive way to get started. These terminals are available at hamfests for as little as \$5. I've even seen people give them away at the end of the day so they wouldn't have to lug them home. I work in computer support and we had some old terminals that weren't being used. I got permission to borrow one and asked a friend to come over and help set up my TNC. Within an hour I was on the air.

Packet + AMTOR=PacTOR

PacTOR is a digital communication mode developed in Germany by Hans-Peter Helfert, DL6MAA, and Ulrich Strate, DF4KV. It incorporates some of the more desirable features of two older digital modes: AMTOR and packet. Like packet, PacTOR supports the complete ASCII character set. This means that you can send upper- and lower-case letters and binary files, such as computer software, graphics files and other information.

Like AMTOR and packet, PacTOR sends error-free information by using a handshaking system. When the data is received intact, the receiving station sends an ACK signal (for acknowledgment). If the data contains errors, a NAK is sent (for negative acknowledgment). In simple terms, ACK means, "I've received the last group of characters okay. Send the next group."

NAK means, "There are errors in the last group of characters, send them again." This back-and-forth data conversation sounds like crickets chirping. In the case of PacTOR, the long chirp is the data and the short chirp is the ACK or NAK. AMTOR and PacTOR sound similar when you hear them, but PacTOR is the mode with the extended chirps.

With AMTOR and packet, a group of characters sometimes must be repeated over and over to deliver the information error-free. This results in slow communication, especially when conditions are poor.

PacTOR solves this problem by "remembering" the positions of missing elements in a garbled data burst. When data is missing, the NAK signal is sent. When the data is repeated, however, the PacTOR TNC analyzes it to determine if the missing data elements were received correctly this time around. It doesn't care whether the rest of the characters are readable or not. If the missing information made it through, PacTOR automatically fills the holes and you see perfect, error-free text on your screen. If not, the NAK is sent and it patiently tries again.

This system is known as memory ARQ. It dramatically reduces the number of repeat transmissions required. The benefit to you is improved communication. AMTOR and packet require perfectly clean received data bursts. When band conditions are poor, AMTOR and packet are painfully slow. There can be a long wait between the time you type something and the moment the other person gets to read it. PacTOR, on the other hand, keeps plugging along.

PacTOR adjusts automatically to band conditions. If signals are good, PacTOR will run at 200 bit/s (bits per second). If the band starts to go, it slows down to 100 bit/s, which still isn't bad. I've enjoyed long contacts using PacTOR under conditions where the S-meter needle didn't move on my receiver!

Hardware for PacTOR

Most SSB transceivers can be used with PacTOR. Some radios, especially older rigs, may have problems if the relays are too slow to handle the rapid change-over from transmit to receive. My old transceiver had loud relays, but did a fine job with PacTOR. Solid-state transceivers need to have a 100 percent duty cycle rating. This means they're designed to handle the long-

er key-down periods necessary for many digital modes.

To get on PacTOR, you need a dedicated PacTOR controller or a multimode TNC (sometimes referred to as multimode communications processor, or MCP) with PacTOR capability. Some TNCs manufactured before PacTOR was developed can be upgraded with a new EPROM chip kit or an add-in daughterboard.

In addition to an SSB transceiver and a PacTOR-capable TNC, you need a computer or one of those dumb terminals I mentioned earlier. If you can afford it, I strongly recommend that you step up to a personal computer (used or new) as soon as possible. Computers are more expensive, but they make it much easier to operate the digital modes.

I didn't have much money when I was ready to progress to a computer-driven setup. I looked around and found an old IBM-XT in perfect shape with a VGA monitor and a 20-megabyte hard disk for \$225. This was in December of 1992. At a recent hamfest I saw two similar PCs going for \$75 each. These are old technology and they won't run any of today's Windows or OS/2 software, but the programs I run for ham radio work fine.

If you want a decent PC, with prices as low as they are today, I recommend a machine with at least an 80486DX CPU,

eight megabytes of RAM, 400-megabyte hard drive, a 15-inch SVGA monitor, a fast video adapter with at least one-megabyte of video RAM, and if you can afford it, a double-speed CD-ROM drive and combination CD-ROM adapter card/ sound board. The computer's motherboard should have a PCI or VL bus design. In a future POP'COMM Ham Column, I'll cover computers in more detail and explain what this jargon means, and give you tips on what you should consider when buying a PC for your radio room.—WS10]

Software for PacTOR

There's a variety of software that you can use with PacTOR. A simple terminal program (the kind you'd use to call up a telephone BBS) will work with a TNC, but there are more sophisticated programs. Many TNC manufacturers offer software to match their products. It's specifically designed to make digital operation as easy as possible. In addition to the manufacturer-specific software, there are public domain, freeware and shareware products available. Public domain software is free, uncopyrighted programs that anyone may use, modify and distribute at will. Freeware is copyrighted software that the author makes available to use for free, but not to be modified or distributed in altered form. Shareware is a method of marketing copy-

righted commercial software that allows you to get a copy of a program and try it out. If you intend to continue using it after a certain amount of time, you purchase it by sending in a registration fee. All types of programs are available from telephone BBSs, Internet anonymous-FTP sites and on some packet BBSs.

There are many commercial software packages available through conventional means, including mail order and via retail dealers. Check the advertising pages of *Popular Communications*, *CQ*, *QST* and other radio publications, and send away for brochures and catalogs. Software makes the difference when it comes to ease of use, so choose carefully!

How to Do PacTOR

Operating PacTOR is easier than you might imagine. Even so, some hams say that they're intimidated by this mode. (This also sometimes happens when an amateur first tries to operate RTTY or AMTOR.) Why? Perhaps they read the manuals and feel overwhelmed with new information and new concepts. Or maybe as a "newbie" on a different mode, you feel like you're operating technique will be sloppy and make it look like you don't know what you're doing. With the proper software and a little help, you can be on the air in no time—and no one will be able to tell you

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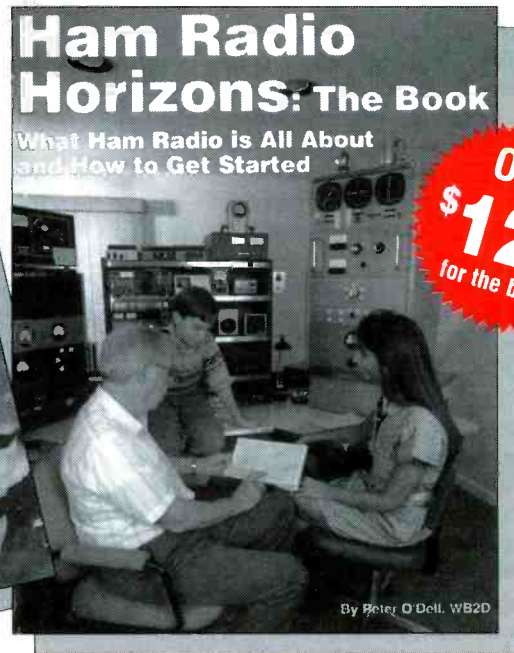
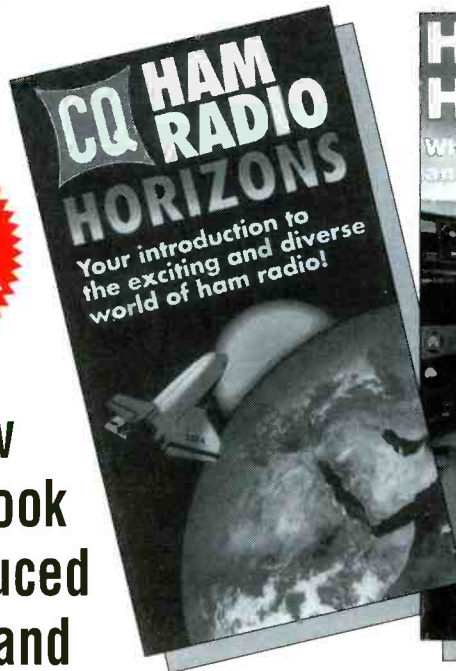
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PacTOR Resource Guide

Books and Newsletters

- *Your RTTY/AMTOR Companion*, by Steve Ford, WB8IMY. Available from your dealer or directly from the ARRL.
- *The RTTY Journal*. 1904 Carolton Lane, Fallbrook, CA 92028-4614; 619-723-3838.

Multimode PacTOR TNC Manufacturers

- Advanced Electronic Applications (AEA), PO Box C2160, Lynnwood, WA 98036-0918; 206-775-7373.
- Kantronics, 1202 E 23rd St, Lawrence, KS 66046; 913-842-7745.
- MFJ Enterprises, Box 494, Mississippi State, MS 39762; 800-647-1800.
- PacComm, 4413 N Hesperides St, Tampa, FL 33614-7618; 813-874-2980.

haven't been doing it all your life. And it's guaranteed that everyone you meet on the air was new to PacTOR once within the past couple of years!

I was on PacTOR the other night chatting with a 34-year-old first-grade teacher in Washington. She seemed experienced and I assumed that she'd been PacTOR-active for quite a while. You can imagine

my astonishment when I saw the following on my screen:

You are my second PacTOR contact. I'm just trying out this mode.

She went on to say:

PacTOR is great fun, much better than working SSB. You find a few wise guys on SSB if you are a YL. Hi! On PacTOR the guys are gentlemen, with something interesting to say.

On 20 meters, you'll find PacTOR from 14. 070-14. 085 MHz almost anytime the band is open. This seems to be the most popular subband, but you'll find PacTOR activity on other HF bands, too. Novice and Technician-Plus hams can operate PacTOR from 28. 100-28. 200 MHz. PacTOR isn't sensitive to which sideband you use, but most people operate on LSB.

When you call CQ, you use the Unproto mode. This means the information is sent over the air in the form of unconnected packets. You send your CQ in this mode and then changeover to PacTOR standby to wait for a reply.

If you just want to listen, you select the PacTOR listen mode. When you see someone calling CQ, use the required keystrokes to send a connect request. Your TNC will jump to the ARQ mode and begin sending the request. If the other station hears you, the link is established and away you go. Only one station can talk at a time. The station

sending information is the information sending station or ISS. The receiving station is—you guessed it!—the information receiving station or IRS. When you finish speaking at the keyboard, you "turn over" the link so that the other station can reply. You become the IRS and the other station becomes the ISS. PacTOR-aware software allows you to do this by pressing a single key. To let the other station know that you're about to switch things around, it's best to send "BACK TO YOU" or something similar. I've made friends all over the world on PacTOR. It's a pleasure to operate and most people you encounter will be true conversationalists. This includes DX stations. I'm always fascinated to get more specific information about what life is like for people in other parts of the world. Once my nine-year-old son got into a joke-telling contest for about half an hour with a gentleman in England. PacTOR made it easy and best of all, it was fun.

Send your photos, cards, comments, and so on to me at ARRL HQ, Department PCN, 225 Main St, Newington, CT 06111; e-mail bbattles@arrl.org. Give PacTOR a try and see how much fun this digital mode can be. Let me know what new—and old—modes you've tried lately and how things are working out. In an upcoming column we'll discuss other advanced digital communication technologies, such as Clover and G-TOR. ■

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(See our ad on page 57 & 69)

INSIDE THE WORLD OF SATELLITE COMMUNICATIONS

WxSat V—The Final Chapter

This is the final installment of our weather satellite (wxsat) stations series. We are going to take a look at demodulators, printers, programs, and methods of displaying the signals.

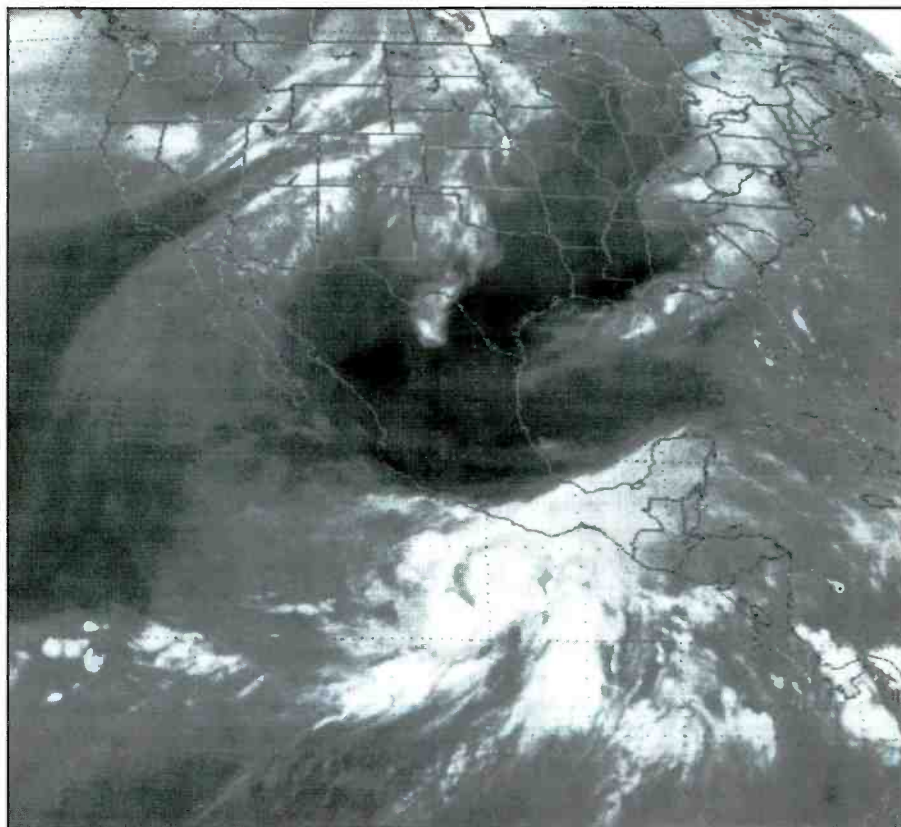
First, we'll explore how to convert audio signals from the satellite into digital information the computer can use and display. This is done through a demodulator which comes in two forms: single mode, and multi-mode units. A popular multi-mode unit is the M-8000 multi-mode communications terminal by Universal Electronics, of Columbus, OH. By utilizing the complex technology of the M-8000, computer use is avoided. Your audio signal is simply fed into the M-8000. A printer can be used to display the weather maps from the satellite. A video monitor can be attached to the M-8000 to display the weather maps, again, without the aid of a computer.

The M-8000 allows you to tune a multitude of other data transmissions from a variety of sources besides satellites. You can tune any data transmission in your station's range from HF/VHF or UHF. Weather FAX (weFAX) is only one of the many transmission modes the M-8000 will decode. Other modes include RTTY, Packet, FEC, FDM, TDM, Sitor, ASCII, and Morse. Other demodulators by Universal are also available. The M-400 and the earlier M-800 which can still be found on the used market are also excellent units.

Keep this in mind: If you are equipped to decode HF FAX (weather maps) transmissions, a new demodulator is needed to decode satellite FAX. HF FAX are broadcast by super-imposing an FM (frequency modulated) signal onto an AM (amplitude modulated) carrier, meaning the HF FAX demodulator needs the capability to extract the FM signal from the AM carrier for processing and displaying. Satellites use the reverse mode of transmission, as they super-impose an AM signal onto an FM carrier. If you want to tune both the satellites and also HF FAX a multi-mode terminal, like the Universal M-8000 or similar, is needed. The unit must have a demodulator that is switchable between these two modes, or two demodulators—one for HF, the other for satellites.

DGM Electronics makes the FAX-1000 demodulator which is switchable between AM and FM, so it can be used for satellite and HF FAX. CRL Enterprises makes a demodulator that is also switchable between satellite and HF FAX, in kit form.

Regardless of the method you choose,



An example of a weather FAX.



The FAX-1000 demodulator is switchable between AM and FM, and can be used for satellite and HF FAX.

RADIO FACSIMILE TERMINAL WX2000

STAND ALONE RADIO FACSIMILE TERMINAL FOR REMOTE IMAGE SENSING



A new member of the weFAX market is the WX-2000 by AOR, Ltd.

use a VGA or SVGA monitor, and a 24-pin dot matrix printer to display weFAX.

A relative newcomer to the weFAX market is the WX-2000 by AOR, Ltd. This unit combines an AM/FM demodulator and a quality FAX printer, and only operates in FAX mode.

Software is available for the WX-2000 from several suppliers. One good program is called JV-FAX 70 ZIP. Ron Burke, KB9DJA, our wxsat expert, says the program can be pulled off of WB4QOJ's wxsat BBS. The 24-hour phone number is 1 (703) 362-8673. Access is N-8-1 14.4 V.32.

If you are equipped for TVRO and have a shortwave receiver, add a demodulator, like an M-8000 and a printer or monitor or a WX-2000, and receive pictures from U.S. and Russian geo-stationary satellites. The satellite is on Spacenet 3. On transponder 17, you will find weather maps transmitted on subcarriers at 1.568 MHz (Meteosat), 1.886 MHz (GOES), and 1.926 MHz. These images can be displayed by connecting the antenna output of a shortwave receiver to the baseband output jack on the back of the TVRO receiver. To ensure there is no voltage on the baseband output use a through-tap on the line (see the November 1994 installment). Then connect the audio output of the shortwave receiver to the demodulator, and connect a printer or monitor.

For more information on this TVRO

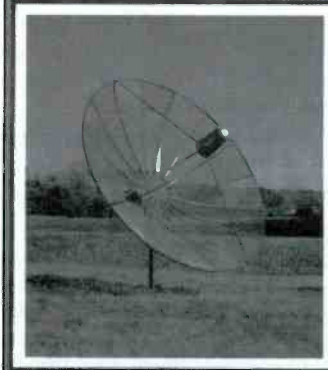
method or other satellite and HF data modes, refer to Thomas P. Harrington's book, *Satellite Radio*. Besides covering FDM, SCPC, subcarriers and various others, it also includes a transponder-by-transponder listing of radio and data services. Also see the sidebar for a list of wxsat equipment suppliers.

That puts the ribbon on this five-part wxsat intro series which covered things a beginner needs to know about weather satellites, the frequencies they use, where they are located on the antennas, plus the converters, demodulators, pre-amps, and receivers needed to hunt these exotic signals from outer space.

A letter from Tony Stellato, KA2KCE, of Yonkers, NY, brings our series to an appropriate end. Tony mentions he has an FRG8800 with a VHF module in it. He wonders what else he will need to tune the satellites. Well, tune either the polar (low) orbiting spacecraft or the geo-stationary (high) orbit satellites. An appropriate antenna is needed for each satellite system you plan to tune. If you have a TVRO antenna, add a feed horn, a 137 MHz pre-amp and receiver with a 30 to 50 kHz-wide IF, and low loss coax for the geo-stationary satellites down to 137 MHz. From here Tony, you have what is needed after the receiver. If you can, check out back issues for a complete picture of how to set up your station. See ya' next month. ■

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SCANNING VHF/UHF

BY CHUCK GYSI, N2DUP

MONITORING THE 30 TO 900 MHz "ACTION" BANDS

Popular Communications is online! While many of you with Internet connections have been sending me e-mail for the past few months, *POP'COMM* now has a new section on America Online where you can interact with our editors and writers.

POP'COMM's section is located in America Online's Ham Radio Club. On the message boards is a section for manufacturers, dealers, and vendors. It is there where you will find *POP'COMM's* folder. You can post messages there for any of *POP'COMM's* staff members. Your message will be forwarded to *POP'COMM's* offices for a reply, or perhaps I can answer your question if it general in nature. If you have a computer and want to go online with America Online, call for free software at (800) 827-6364.

For those with Internet connections on their computers, or those on other online services, you still can send e-mail to *POP'COMM*. Address your mail to my address: scan911@aol.com. Be sure to include your mailing address, too, and mention who you want your message forwarded to at *POP'COMM*. Make sure you mark your message as being for *POP'COMM*, too. We'll be looking for you online!

Rail Phones

I received a message from Jon Rice via the Internet. Jon says he enjoys reading this column and thought he'd make a contribution. Jon lives in southwest Michigan and spends a lot of time on the road for his job. While traveling in his area, he likes to hunt for various signals such as industrial facilities, railroads, utilities and more. He said that recently the Conrail line in his area has been using many leased engines as well as engines from other railroads. Apparently, rather than equip all of the engines with the correct frequencies, Conrail is putting cellular telephones in some of the engines. Jon says he was quite surprised to hear them one day on a cellular phone frequency and didn't realize what they were doing at first. I guess the point here is that you never know who is using cellular phones.

Five-Oh!

Rich, who is in the Navy in Hawaii, sent a message via the Internet. Rich says he mainly is interested in public safety frequencies. His main goal is to compile a list of frequencies to be monitored for emergency communications. The reason: he has been tasked with setting up an emergency communications center on his base, NCTAMS EASTPAC, located in Wahiawa.

Here are a few frequencies Rich sent along to share with our readers: 141.000,

Federal Fire Department (all Oahu military bases on repeater); 136.400 Schofield Barracks military police; 155.130, Honolulu police (appears to be Waipahu area); and 155.370, (listed as Honolulu police, but sounds like a security company with responses to alarm zones).

Florida Freqs

Darren W. Sheremeta of South Daytona, Florida, says he enjoys reading Scanning VHF/UHF in *POP'COMM* and has enjoyed the scanning hobby for seven years. He says he got started scanning on Long Island, New York, and presently uses a Uniden Bearcat 100XLT that has survived his "drop testing." Darren now lives in Volusia County, Florida, and sent along some frequencies to share. He notes that most police and fire departments are planning on going to an 800 MHz radio system in the county.

The trunked public safety system in Volusia County will operate on the following frequencies:

855.2125,	855.4625,	856.2625,
856.4875,	856.7125,	856.7375,
856.7625,	857.2625,	857.4875,
857.7125,	857.7375,	857.7625,
858.2625,	858.4875,	858.7125,
858.7375,	858.7625,	859.2625,
859.4875,	859.7125,	859.7375,
859.7625,	860.2625,	860.4875,
860.7125,	860.7375,	860.7625.

Here are some frequencies for northeast Volusia County, just in time for those headed for warmer weather: 154.785, Daytona Beach police (mainland); 155.070, Daytona Beach police (beachside); 154.040, Daytona Beach police F-3; 154.175, Daytona Beach fire dispatch; 154.415, Daytona Beach rescue; 154.145, Volusia County fire dispatch; 154.340, Volusia County fire Tac 1; 154.280, Volusia County fire Tac 2; 155.100, Volusia County Tac 3; 154.860, Volusia County sheriff F-1; 154.725, Volusia County sheriff F-2; 155.310 and 155.595, Volusia County sheriff; 154.385, Port Orange fire; 155.550, 154.815 and 155.760, Port Orange police; 154.680, Florida Highway Patrol F-1; 154.920, Florida Highway Patrol F-2 air; 155.445, Florida Highway Patrol F-3; 154.950, Volusia County all-points bulletins; 155.370, Volusia County intercity; 154.250, South Daytona fire; 155.790, South Daytona police F-1, Port Orange police, Ponce Inlet Police, Daytona Beach Shores police; 155.145, South Daytona police F-2; 453.500, South Daytona local government; 154.875, Holly Hill police; 155.100, Ormond Beach po-

lice; 159.375 and 159.450, Florida forestry; 154.950, Daytona Beach Shores police; 155.175 and 460.575, Volusia County ambulance dispatch.

Virginia Scanning

Jeff Bixby, of Virginia Beach, Virginia, sent me a list of frequencies for his area via America Online. Jeff says he is a scanner listener from Virginia's Tidewater area, and monitors the region using a Realistic Pro-2006, a Realistic Pro-37, a Realistic Pro-2020 and a Uniden Bearcat 890XLT. He notes that he lives in a townhouse in an area that doesn't allow outside antennas, so he improvised by suspending a base omnidirectional antenna in the townhouse's attic along with a directional yagi-style antenna for pinpoint listening.

Here's Jeff's frequency list: 154.370, Virginia Beach Fire dispatch (paggers); 155.175, Virginia Beach rescue dispatch; 154.415, Chesapeake fire dispatch; 462.975, Norfolk Paramedical Rescue Service; 46.06, Hampton fire dispatch (paggers); 154.130, Newport News fire dispatch; 462.575, 462.675 and 461.575, Tidewater Fire Photographers Association; and 159.165, Virginia State Police.

In addition, Virginia Beach uses an 800 MHz trunked radio system for police, fire, rescue, public utilities and other city services on these frequencies:

856.4625,	856.4875,	856.7125,
856.7375,	857.4625,	857.4875,
857.7125,	857.7375,	858.4625,
858.4875,	858.7125,	858.7375,
859.4625,	859.4875,	859.7125,
859.7375,	860.4625,	860.4875,
860.7125,	860.7375,	

Ski Canada

Trevor Fletcher writes from Edmonton, Alberta, to tell us how cold it is up there. He says that winter brings plenty of scanning action on the ski slopes in Alberta and British Columbia.

Alberta's ski frequencies include 158.350, Banff Lifts; 170.280, Norquay Ski Patrol; 165.750, Sunshine Ski Patrol; 157.560, Edmonton Rabbit Hill Ski Club; 173.400, Grande Prairie Powder King Hill F-1; 173.640, Grande Prairie Powder King Hill F-2; 173.700, Grande Prairie Powder King Hill F-3; 163.650, Jasper Marmot Basin F-1; 163.560, Jasper Marmot Basin F-2; 163.050, Jasper Marmot Basin F-3; 164.640, Marmot Basin Ski Patrol. British Columbia ski hills-frequencies: 162.150, Golden Heli Skiing; 168.930, Kimberley Ski Hill; 452.8375, Vernon Silver Star Ski Patrol; 166.785,

Whistler Lifts; 169.710, Whistler Ski Patrol; 169.980, Whistler maintenance; 169.605, Whistler operations.

Hot Channel

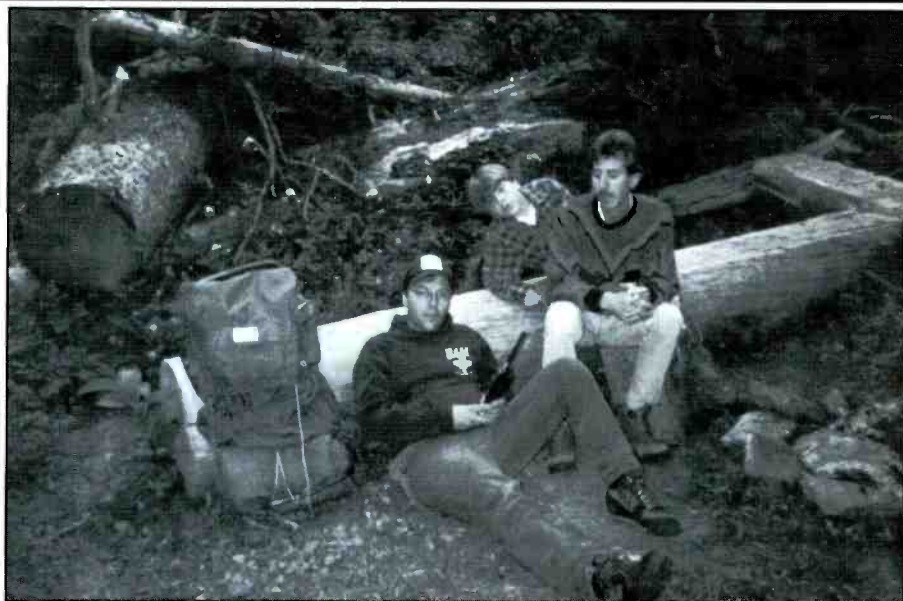
Jeff Ryan, KB3BEI, checked in via the Internet from Pennsylvania. He follows up on comments here back in October about how the Philadelphia Fire Department uses 170.150 for rescue dispatch. Apparently, this frequency is used for fire purposes only within a 150-mile radius of New York City. Outside that zone, it is used by TV and radio broadcasters for remote broadcasts. Several other fire departments within 150 miles of New York City also use the frequency. A reader from Trenton, New Jersey, posed the original question.

Jeff says that his scanner stops a lot on 453.375, the police dispatch frequency for Trenton, New Jersey. Jeff says that every time he turns on his scanner, it stops on the frequency the most. "There is so much activity on this frequency, it's unbelievable," Jeff said. If you live within range, you may want to check it out.

Trenton police also use 453.225 as an F-2, plus for vice units, and 453.425 for vice units. New Jersey's state capital is a busy place.

Your Turn

What are you hearing on your scanner? We look forward to hearing from scanner listeners. How about sending in a photo of



Trevor Fletcher of Edmonton, Alberta, holds his handheld scanner while with friends up a mountain in Reuelstoke, British Columbia, last summer. He uses his Realistic Pro-31 to tune in Royal Canadian Mounted Police, CP Rail and towns below the mountain. Trevor said it was fun to use the scanner to pass time before hiking up to the summit.

your listening post or antenna farm, too? We like to see lists of your favorite frequencies to share with other readers. If you have questions, we will try to answer as many as practical in this column. Write to: Chuck

Gysi, N2DUP, Scanning VHF/UHF, Popular Communications, 76 North Broadway, Hicksville, New York, 11801-2909, or computer users can send your e-mail via the Internet to: scan911@aol.com. ■

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YOU SHOULD KNOW

BY WILLIAM D. MAULDIN, WG4R

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

How to Get the Most Out of Scanning

Most people today who venture out and purchase their first scanner do it with the desire to monitor the local police and fire departments. Of course, this is an enjoyable part of the hobby of radio communications monitoring. However, there is much more in the hobby of listening than just monitoring the police and fire calls.

If you are reading this and you have not purchased your first scanner, you need to seriously consider your personal interests before making that important purchase. Although modern technology and marketing competition have worked in favor of the consumer by bringing prices down, you can spend several hundred dollars when you buy that first scanner. Many new scanner purchasers find they have bought the wrong scanner once they bring the new listening device home and plug it in. Many discover that the mass of fast blinking numbers, the selections for wide band FM, narrow band FM, and AM are confusing. Others find that they should have bought a mobile scanner or perhaps a handheld portable rather than the desktop plug in model. The questions for any newcomer to the hobby are endless. What should you consider and what steps should you take to insure your purchase is what you really want?

First Things First...

First, consider making a list of just what communications interest you. If you are interested in just receiving the local police and fire departments, do you know what the frequencies are? Do you even know what band they are operating on? If you don't, you need some help before selecting your scanner. Let's discuss the band problems first. There are four basic bands being used by public safety agencies today. They are called "low band" which covers 30 MHz through 50 MHz, the "VHF" band, which is 150 MHz through 173 MHz, the "UHF" band which is 450 MHz through 512 MHz, and finally, the 800 MHz band. Before you purchase your scanner, find out which band your listening objective is using. If you don't, you could find your new "all band scanner" doesn't have the ability to offer the desired coverage. Some scanners don't offer full frequency coverage. While you are checking on the frequency of your objective, check a little further. Are they planning to change bands soon? Why would I add this comment? Well, there is good reason. The FCC recently opened the 800 MHz band, and many metropolitan departments are jumping to move to the new, higher frequencies. If you buy a scanner which only covers low band, VHF, and UHF, you can not monitor the new 800 MHz band.

All police and fire communications are



You already own a scanner, maybe something like the Radio Shack PRO-2035. Now find out how to get the most out of the scanning hobby.

FM. In considering your new scanner, you might notice there is a selection for AM. Why would anyone want AM on a scanner? AM is for aircraft communications, that's why. Would you want to consider a scanner for listening to aircraft? From my years in the hobby, I would certainly advise you to get a scanner with AM and the aircraft band. Aircraft communications are fun to listen to, and can offer some exciting and enjoyable listening experiences. If you think you would enjoy catching some of the chatter from passing airliners as they talk with the air traffic controllers and the company dispatchers, add AM to your list, and make sure the scanner covers from 108 MHz through 137 MHz. If there is a busy commercial airport near you, have a scanner that covers AM and the aircraft band is certainly something that you need to seriously consider.

Now that we have briefly discussed the needed and desired frequency coverage of your pending purchase, we have a few more things to consider. Where will you be doing most of your listening? Most people in this exciting hobby monitor from their home or office, however, if you expect to take your scanner with you in the car, you'll need to know if it operates in both places. Check the power requirements of the scanner and make sure it will work in both places, if needed. If you plan on taking your scanner with you to ball games, races, or other outside events, you might want to consider a handheld scanner. Modern technology offers full coverage handheld scanning receivers, although the antenna styles on handhelds can reduce the listening range slightly, especially on the lower bands. If a handheld is being considered also think about battery life and rechargeable battery packs. Most major sporting teams use two-way radio during

games, as do media coverage directors, and a portable scanner can provide some fantastic listening catches.

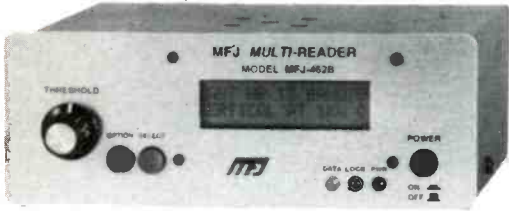
Where do you find answers to these and other questions? There are many sources for such information. Naturally, the salesman of the local radio store can answer some of the questions. I would suggest that you make a list of all of the departments, services, and communications that interest you. Ask him if the scanner on his shelf will receive each one, and if time permits, ask for a demonstration. If the scanner is noisy, ask why. If the signal can't be received in the store, again, ask why. Will you have these same problems at home or in your office? If you have doubt about the scanner or the answers, put off your purchase until you have double checked the answers and the expected reception. Many of you will find a licensed radio amateur in your neighborhood or perhaps goes to your church or school. Seek out a ham for answers. Licensed ham radio operators have been tested and have a wealth of knowledge about radio matters, and you'll find them more than glad to help with answers.

What about the antenna? You may or may not need an outside antenna, depending on your location. In most cases, the pull-up antenna that comes with most scanners works fine unless you want to receive signals from a distant area. My suggestion would be to take your scanner home and give the standard pull-up antenna a try before considering an outside antenna purchase. If you find you're not receiving the desired signals, then an outside antenna, mounted as high as possible, will probably be needed. There are several different types of scanner antennas.

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Receive Color News Photos, Weather Maps, RTTY, ASCII, Morse Code

MFJ-1214PC **\$149⁹⁵**

Use your computer and radio to receive and display *brilliant full color* FAX news photos and incredible WeFAX weather maps with all 16 gray levels. Also RTTY, ASCII and Morse code.

Animate weather maps. Display 10 global pictures simultaneously. Zoom any part of picture or map. Frequency manager lists over 900 FAX stations. Automatic picture capture and save.

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Super Hi-Q Loop™ Antenna

The Super Hi-Q MFJ-1782 Loop™ is a **\$269⁹⁵** professional quality remotely tuned 10-30 MHz high-Q antenna. It's very quiet and has a very narrow bandwidth that reduces receiver overloading and out-of-band interference.

High-Q Passive Preselector

MFJ-956 **\$39⁹⁵**
The MFJ-956 is a high-Q passive LC preselector that lets you boost your favorite stations while rejecting images, intermod and other phantom signals. Covers 1.5-30 MHz. Has preselector bypass and receiver grounded position. 2x3x4 in.

Mobile Scanner Ant.

Cellular MFJ-1824BB/BM **\$19⁹⁵**
look-a-like. Covers 25-1300 MHz. High -- est gain on 406-512 and 108-174 MHz, 19 in. Magnet mount. MFJ-1824BB has BNC/UHF plug; MFJ-1824BM has Motorola plug.

MFJ Antenna Matcher

MFJ-959B **\$89⁹⁵**

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, \$12.95.

High-Gain Preselector

MFJ-1045C **\$69⁹⁵**

High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, \$12.95.

Dual Tunable Audio Filter

MFJ-752C **\$99⁹⁵**

Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

Easy Up Antennas Book

How to build MFJ-38 and put up **\$16⁹⁵** inexpensive, fully tested wire antennas using readily available parts that'll bring signals in like you've never heard before.

Covers receiving antennas from 100 KHz to almost 1000 KHz. Includes antennas for long, medium and shortwave, utility, marine and VHF/UHF services.

MFJ 12/24 Hour LCD Clocks

MFJ-107B **\$9⁹⁵**

MFJ-108B **\$19⁹⁵**

MFJ-105B **\$19⁹⁵**

MFJ-108B, dual clock displays 24 UTC and 12 hour local time *simultaneously*. MFJ-107B, single clock shows you 24 hour UTC time. *3 star rated by Passport to World Band Radio!*

MFJ-105B, accurate 24 hour UTC *quartz wall clock* with large 10 inch face.

MFJ Antenna Switches

MFJ-1704 **\$59⁹⁵**

MFJ-1702B **\$21⁹⁵**
MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection device. Good to 500 MHz. 60 dB isolation at 30 MHz.

MFJ-1702B for 2 antennas.

World Band Radio Kit

MFJ-8100K **\$59⁹⁵ kit**

MFJ-8100W **\$79⁹⁵ wired**

Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

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POP'COMM's World Band Tuning Tips

February—1995

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
2460	R. Alvorada, Brazil	0900	PP	6100	R. Union, Peru	0830	SS
2485	VL8K, Australia	1100		6120	R. Canada Int'l	0200	
3200	TWR, Swaziland	0430		6125	Spanish National Radio	0230	
3220	R. Madang, Papua New Guinea	1100		6150	AWR, Costa Rica	0600	
3220	HCJB, Ecuador	0430		6155	R. Austria Int'l	0700	
3240	TWR, Swaziland	0300		6155	R. Sweden	0230	
3255	BBC Lesotho relay	0300		6165	R. Netherlands, Bonaire relay	0100	
3280	La Voz del Napo, Ecuador	1000	SS	6165	Swiss Radio Int'l	0530	
3290	Namibia Broadcasting Co.	0300		6185	R. Educacion, Mexico	0600	SS
3300	R. Cultural, Guatemala	0300		6190	BBC relay, Lesotho	0300	
3300	CHU, Canada (time station)	0200		6203	R. Cusco, Peru	0100	SS
3310	Channel Africa, S. Africa	0357		6245	Vatican Radio	0640	
3356	R. Botswana	0400		6250	R. Nac. Malabo, Eq. Guinea	0500	SS
3360	La Voz de Nahuala, Guatemala	0300	SS	6280	King of Hope, Lebanon	0400	AA
3366	GBC, Ghana	0600		6299	Sani Radio, Honduras	0200	S
3375	R. Clube Dourados, Brazil	0100	PP	6560	Rep. of Iraq Radio	0157	s/on, AA
3810	HIZIOA, Ecuador (time stn)	0400		7100	VOIRI, Iran	0028	s/on
3955	Channel Africa, S. Africa	0324	s/on	7110	Voice of Ethiopia	0400	Amharic
3980	VOA relay, Germany	0400		7125	RTV Guineenne, Guinea	0530	FF
4460	R. Norandina, Peru	0300	SS	7180	BBC relay, Hong Kong	1300	s/on
4610	Rep. of Iraq Radio	0200	AA	7185	Channel Africa, S. Africa	0430	FF
4753	RRI Ujung Pandang, Indonesia	1200	II	7200	Rep. of Sudan Radio	0300	AA
4755v	Rdf. Maranhao, Brazil	0200	PP	7205	Cyprus Broadcasting Co.	2230	Greek (wknds)
4760	ELWA, Liberia	0600		7250	Vatican Radio	0600	
4765	RTVC, Congo	0355	s/on, FF	7255	V of Nigeria	0500	
4770	R. Nigeria, Kaduna	0500		7265	VOA, Botswana	0430	
4770	Centinela del Sur, Ecuador	0200	SS	7305	Vatican Radio	0250	
4780	R. Pyongyang, N. Korea	1200	KK	7310	R. Slovakia Int'l	0100	
4790	R. Atlantida, Peru	0200	SS	7345	R. Prague, Czech Rep.	0700	
4800	R. Lesotho	0400	vernacular	7365	KNLS, Alaska	1200	
4805	Rdf. do Amazonas, Brazil	0100	PP	7385	RFPI, Costa Rica	0400	
4810	R. 2000, S. Africa	0230	EE/Afk	7475	RTT, Tunisia	0500	AA
4824	La Voz de la Selva, Peru	1030	SS	7670	Horizont Radio, Bulgaria	0400	Bulgarian
4832	R. Reloj, Costa Rica	0100	SS	9200	R. Omdurman, Sudan	1800	
4835	R. Tezulutlan, Guatemala	1100	SS	9370	KSDA, Guam	1500	
4840	R. Valera, Venezuela	0300	SS	9388	Kol Israel	0330	HH
4860	R. Federacion, Ecuador	0000	SS	9420	Voice of Greece	0130	GG/EE
4870	ORTB, Benin	0500	FF	9435	Kol Israel	0500	
4885	R. Clube do Para, Brazil	1000	PP	9445	Voice of Turkey	2330	TT
4890	R. France Int'l, via Gabon	0445	FF	9475	R. Cairo, Egypt	0200	
4895	La Voz del Rio Arauca, Colombia	0200	SS	9480	TWR, Monaco	0730	
4904	RN Tchadienne, Chad	0500	FF	9485	R. Prague, Czech Republic	2100	
4905	R. Relogio Federal, Brazil	1000	PP	9505	Voice of the Straits, China	1200	CC
4910	La Voz de Moquitia, Honduras	0000	SS	9515	R. Romania Int'l	0400	
4930	R. Internacional, Honduras	0300	SS	9525	R. Singapore Int'l	1300	
4955	R. Marajoara, Brazil	0900	PP	9535	R. Japan	1400	
4960	R. HRET, Honduras	0100	SS/vern	9535	Swiss R. Int'l	1000	
4975	R. Timbira, Brazil	0600	PP	9540	R. Nacional Espana, Spain	0100	
4990	R. Nigeria	0500		9560	R. Jordan	1600	
5010	R. Garoua, Cameroon	0500	FF	9570	R. Portugal	0230	
5025	R. Parakou, Benin	0500	s/on, FF	9570	R. Romania Int'l	0230	
5030	AWR, Costa Rica	0330	SS	9575	Radio Medi Un, Morocco	0730	FF
5045	R. Clube do Para, Brazil	0100	PP	9580	R. Tirana, Albania	0330	
5047	R. Togolaise, Togo	0500	FF	9580	Africa No. One, Gabon	2200	FF
5055	TIFC, Costa Rica	0400		9580	R. Yugoslavia	0000	
5056	RFO, Fr. Guiana	0400	FF	9590	R. Norway	1300	
5060	R. Nac. Progreso, Ecuador	0300	SS	9600	HCJB, Ecuador	0730	
5075	Caracol, Colombia	0300	SS	9605	Vatican Radio	0330	SS
5268	R. Moundou, Chad	0500	FF	9620	R. Nacional Espana	0100	SS
5955	Channel Africa, S. Africa	0400		9645v	Faro del Caribe, Costa Rica	0300	
5960	R. Canada Int'l	2330		9665	R. Marumby, Brazil	2300	PP
5970	R. Budapest, Hungary	0230		9650	R. Korea, S. Korea, via Canada	1130	
5975	BBC via Antigua	0100		9675	NBC, Papua New Guinea	1130	
6005	CFCX, Canada	1100		9690	China Radio Int'l, via Spain	0300	
6010	R. Havana Cuba	0030		9695	R. Rio Mar, Brazil	1100	PP
6015	R. Vlaanderen Int'l, Belgium	0630		9700	R. Bulgaria	2130	
6015	R. Austria Int'l, via Canada	0530		9700	R. New Zealand Int'l	0800	
6030	R. Globo, Brazil	0900	PP	9705	R. Portugal	0200	
6030	R. Marti, USA	0600	SS	9725	RAI, Italy	0050	
6050	R. Liberty via Portugal	0100	RR	9725	R. Japan, via Canada	0500	
6070	CFRB/CFRX, Canada	1200		9745	HCJB, Ecuador	0730	
6085	Deutsche Welle, Germany, via Canada	0300		9750	R. Korea, S. Korea	1200	
6090	R. Bandeirantes, Brazil	0800		9755	Radio Canada Int'l	0000	
6095	Vatican Radio	0250		9770	R. Australia	1400	

Freq.	Station/Country	UTC	Notes	Freq.	Station/Country	UTC	Notes
9770	V of UAE, Abu Dhabi	2300		15020	All India Radio	1400	
9780	China Radio Int'l, via Mali	0300		15030	RFPI, Costa Rica	2300	
9810	KHBN, Palau	1500		15084	VOIRI, Iran	0100	Farsi
9810	R. Sweden	0030		15095	R. Damascus, Syria	2030	
9820	Radio Havana Cuba	0200	USB	15105	R. Moscow, Russia	1500	
9830	R. Jordan	2100	AA	15115	R. New Zealand Int'l	0130	
9835	R. Budapest, Hungary	0100		15140	R. Nacional, Chile	2200	SS
9840	R. Kuwait	2100	AA	15155	HCJB, Ecuador	0130	
9860	Swiss R. Int'l, via Fr. Guiana	0400		15160	VOA, Philippines	1400	
9870	Monitor Radio, USA	0600		15168	R. Tahiti	0300	FF/TT
9870	R. Austria Int'l	0000	GG	15175	FEBA, Seychelles	1100	AA
9885	Swiss R. Int'l	0100		15180	R. Ukraine	0130	
9900	R. Cairo, Egypt	2230		15200	R. Nacional Amazonas, Brazil	2300	PP
9910	All India Radio	1530		15200	RFI, France via Fr. Guiana	2300	SS
9925	R. Vlandereen Int'l, Belgium	2000	SS	15235	V of Great Homeland, Libya	2000	AA
9955	WRMI, Miami	0100		15240	Channel Africa, S. Africa	1600	
9965	KHBN, Palau	1200		15240	R. Sweden	1330	
9977	R. Pyongyang, N. Korea	1100		15265	Radiobras, Brazil	1800	
10060	V of Vietnam	0000	VV	15270	HCJB, Ecuador	1930	
11335	R. Pyongyang, N. Korea	1100	s/on	15290	R. Dniester Int'l, Pridnestrovye	2030	
11550	RTV Tunisienne, Tunisia	1600	AA	15295	R. Tashkent, Uzbek	1330	
11570	R. Pakistan	1700		15310	BBC via Oman	1500	
11603	Kol Israel	0400		15325	R. Canada Int'l	2100	
11615	R. France Int'l	1600		15345	RTV Marocaine, Morocco	1800	AA
11620	SRI, Switzerland, via Fr. Guiana	0330		15345	RAE, Argentina	0200	SS
11655	R. Netherlands	1730		15365	R. Thailand	0030	
11665	R. Cairo, Egypt	1800	AA	15390	RAI, Italy via Ascension	0200	
11680	China Radio Int'l via Fr. Guiana	0400		15395	UAE Radio, Dubai	1330	
11690	FEBC, Philippines	1200	VV	15400	R. Finland Int'l	1330	
11700	R. France Int'l	1600		15415	Libyan Jamahiriya Broadcasting	1430	AA
11705	R. Japan, via Canada	1400		15420	R. Tashkent, Uzbekistan	1200	
11710	RAE, Argentina	0200		15430	Radio Japan	2300	
11715	China R. Int'l, via Mali	0300		15445	Radiobras, Brazil	1200	
11715	R. Korea, S. Korea, via Canada	1030		15445	R. Vlandereen Int'l	1300	
11720	R. Bulgaria	2100		15475	Africa Number One, Gabon	2100	FF
11750	BBC relay, Singapore	1600		15510	R. Australia	0500	
11755	R. Finland Int'l	0130		15530	R. Australia	2200	II
11765	RAI, Italy, via Ascension Is.	0130	II	15555	R. Pakistan	1600	
11780	R. Nacional Amazonia, Brazil	2200	PP	15565	R. Australia	1200	
11780	BSKSA, Saudi Arabia	1730	AA	15570	INBS, Iceland	2017	s/off
11785	R. Guaiba, Brazil	2330	PP	15575	R. Korea, S. Korea	0030	
11800	R. Australia	1300		15610	KTWR, Guam	1500	
11805	VOA relay, Thailand	1230		15615	Reshet Bet, Israel	2300	HH
11810	R. Romania Int'l	1400		15630	V of Greece	1430	GG/EE
11815	Spanish Ntl Radio, via Costa Rica	0100	SS	15635	VOA via Morocco	1700	
11825	R. Tirana, Albania	2200		15675	R. Pakistan	1430	Urdu
11827	R. Tahiti	0300		15675	R. Copan Int'l, Honduras	2300	SS
11830	Vatican Radio	2250		15770	ISBS, Iceland	1230	Icelandic
11830	R. Romania Int'l	0400		17490	HCJB, Ecuador	1000	
11845	R. Canada Int'l	2200		17500	RTT, Tunisia	1330	AA
11855	KSDA, Guam	1300		17510	KWHR, Hawaii	2300	
11860	R. Liberty, via Philippines	1000	RR	17520	V of Greece	1430	GG/EE
11870	Bosnian-Serb Radio, via R. Yugoslavia	0100		17590	R. Finland	1430	
11880	R. Japan via Fr. Guiana	0300		17595	RTM, Morocco	1430	AA
11885	UAE Radio, Abu Dhabi	2300		17620	R. France Int'l	1600	
11900	R. Finland Int'l	1230		17625	R. Bulgaria	1230	
11905	R. Universo, Brazil	2330	PP	17630	Africa No. One, Gabon	1430	FF
11920	Yerevan-Arax R. Agency	2230		17655	R. Netherlands via Bonaire	1830	
11925	HCJB, Ecuador	0600		17670	Swiss Radio Int'l	1500	
11940	R. Jordan	2230	AA	17725	R. Ukraine Int'l	2030	
11945	R. Canada Int'l	2100		17740	R. Finland Int'l	1430	
11990	R. Kuwait	1800		17745	R. Algiers, Algeria	1930	
11995	FEBC, Philippines	1400		17745	R. Tashkent, Uzbekistan	1200	
12000	R. Jordan	0500	AA	17755	R. Nacional Espana, Spain	1900	SS
12050	R. Cairo, Egypt	2100	AA	17775	R. Romania Int'l	1300	
12085	R. Damascus, Syria	2030		17790	HCJB, Ecuador	2130	
12095	BBC, England	1300		17805	R. Romania Int'l	1730	
13590	R. Pakistan	1600		17810	R. Japan	2300	
13615	R. Bangladesh	1230		17815	R. Cultura, Brazil	2200	PP
13625	Golos Rossi, Russia	1200	RR	17820	R. Canada Int'l	1300	
13625	R. France Int'l	1200		17845	Spanish National Radio	1500	SS
13635	Swiss R. Int'l, via Fr. Guiana	0030		17870	R. Sweden	1500	
13660	R. Havana Cuba	0200	USB, EE	17870	RAI, Italy	1730	II
13670	R. Iraq Int'l	2130	AA	17890	Spanish National R., via Costa Rica	2130	SS
13675	UAE Radio, Dubai	1630		17900	R. Portugal	2000	PP
13680	VOA via Bulgaria	1830		21455	R. Canada Int'l	1330	
13715	R. Havana Cuba	2200	SS, USB	21455	HCJB, Ecuador	1330	
13730	R. Austria Int'l	2100		21515	R. Portugal	1500	PP
13750	AWR, Costa Rica	1200	s/on	21520	R. Pakistan	1100	
13760	R. Pyongyang, N. Korea	0000	s/on	21590	R. Netherlands, Bonaire	1800	
13770	Monitor Radio	2000		21605	UAE Radio, Dubai	1430	AA
13860	INBS, Iceland	1215	Icelandic				

sideways. A ground plane antenna looks like a single rod with as many as four legs coming off the bottom of the rod at an angle. Ground plane antennas are normally manufactured for peak operation on a certain frequency, so they do not make good all band antennas. Finally, there is the all band discone antenna. This is like the ground plane except there are many more radials at the bottom and at the top. The discone has become the most popular antenna used today because it is small and normally works very well with all bands. These antennas are easy to put together, are trouble free, and normally come with all cables and instructions. I recommend the discone antenna if you are serious about scanning and want good all-frequency coverage. Keep in mind that there are several different manufacturers of discone antennas, and some offer more band coverages than others. As with the scanner, check it out before making the purchase.

Last But Not Least...

Finally, a few last suggestions. If you can afford it, even though you might not think you need it now, consider buying a scanner with 800 MHz coverage. Although your local police department is on VHF now, you can bet there are radio manufacturers out there who will be trying to change them from their present frequency to the new 800 MHz band. Consider getting a scanner with AM coverage and the 108 MHz to 137 MHz aircraft

band coverage. Although you may have no interest in the aircraft band now, you may later as your interest in the hobby expands. When you visit your local radio store, take the time to ask a few questions.

Get a copy of whatever local directory he might have or suggest. Without a code and signal list, the calls of your local police and fire departments will not mean very much. Many local dealers will have lists they will give you, if asked.

My last suggestion is most important. Get a scanner that is within your technical ability of operation. Yes, I know, sometimes the VCR is beyond me too, but scanners can be even worse! Look over the instructions, and make sure you are technically able to understand the directions for scanning, frequency operation, and searching. I have scanners that are so technically advanced that I have to get out the book every time I operate them. This can take some of the fun out of the hobby. Start out with a scanner that offers the coverage you desire, and that is at a technical level just slightly below the VCR that drives you crazy. I hope this helps! With this information in mind, there are many enjoyable hours of scanning ahead as you make the most of this new and exciting hobby.

About our new columnist: William D. Mauldin, who is taking over duties of the "You Should Know" column, is the General Editor of *Scanner Journal*. *Scanner Journal* is the monthly membership publication of the Radio Communications Monitoring Association, Inc., P.O. Box 542, Silverado, CA 92676. Bill is a long-time communications hobbyist and we welcome him to our staff.—Editor.

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CIRCLE 75 ON READER SERVICE CARD

27 MHz COMMUNICATIONS ACTIVITIES

Hi! I'm the new Citizens Band columnist for *Popular Communications*. Bill Sanders is working on some writing projects you'll be seeing soon, so Tom Kneitel asked if I could take over *CB Scene*. I told Tom I'd be honored.

Since I'm the new guy, let me tell you a little about myself. I think CB is the best radio service there is—simply because it is so much fun, and it is so readily available to anyone who wants or needs to use it. I've been a CBer since the 1970s, operating mostly SSB or monitoring Ch. 9. For nearly ten years, I've been writing about radio-related subjects, including a short stint as the Single Sideband Editor for *The Eleven Meter Times and Journal* (no longer published) and current duties as one of the equipment review editors for *Passport to World Band Radio*. Even though I hold a ham ticket, I spend more time on CB.

I guess that's about it, except that Bill has been kind enough to forward the mail you originally sent to him. All I can say—keep it up! Please send your letters, QSL cards, pictures of your shack, your questions, and your comments. In particular, I'm interested in your stories of how you have used CB to help yourself, help someone else, or otherwise do something useful. And please, include your telephone number (no, I won't publish it), just in case I need to follow-up and ask you a question or two. Now, let's talk CB!

Riding with the Samaritans

Recently, I got the chance to see the

power of CB in action. Some 12 states and 14 cities have the good fortune to have their highways patrolled by professional Samaritans—corporately sponsored professional do-gooders. In the Albany-Schenectady-Troy area of New York, for example, two Samaritan vans patrol the interstate highways during morning and evening rush hours under the sponsorship of the CVS chain of pharmacies. They help people who are in distress.

The Samaritans' one-ton Ford vans are stuffed with equipment to help people out—push bar and tow ball; PA system; front and rear 12-volt jump start systems; compressed air system; gasoline, water, and diesel fuel; two CB radios; cellular phone; fire extinguishers; medical trauma kit and oxygen; brake fluid and hydraulic fluid; fuel and water hoses; hydraulic jacks; bolt cutters; and the list goes on and on. The van is neatly organized so that everything can be found in a flash.

The van drivers are equally well prepared for the job. All are Emergency Medical Technicians, have mechanical training, and complete rigorous Samaritan Training to make sure they are up to the task of dealing both with emergencies and people in various states of distress. With that in mind, I asked to hitch a ride with the CVS Samaritans on the morning patrol.

CVS Samaritan Dave Plouff goes to work early. By 6:30 a.m., he and I are headed southbound on 787, a four-lane arterial that parallels the Hudson River between Albany and Troy. We rendezvous briefly with the other CVS Samaritan van so Dave can swap paperwork with his part-

ner, Shawn Brimhall. The two look sharp in their Samaritan uniforms, but what really stands out is how likeable they are. They are pleasant, courteous, and non-egotistical—just the kind of folks I would want to show up if I had an emergency.

Moments later, we are back on patrol. Motorists bomb by, lights on. The sky is leaden, the color of an old battleship. Between our seats is a radio "tree" that looks like a *POP'COMM* reader's fantasy: there is a VHF high band (155 MHz) for direct connection to the state EMS frequency, a UHF radio for communication between the Samaritan trucks, two CBs for Chs. 9 and 19, a VHF low-band radio for communication with Albany fire and police, a scanner, a mobile cellular phone, and, on the dash, a portable cellular phone. The top of the van bristles like an insect with eight separate antennas.

"In the Albany area, we're lucky," Dave says. "Because our operation is supported by the Tri-County Assistance network. That's over a thousand people with CBs, cellular phones, and ham radio. They help us to spot people who need help. Some members of the network do their own traffic reports, but we all share information cooperatively. It just goes to show what people working together can do."

He adds, "With the volunteer radio network here, we have a unique set-up. I haven't seen anything like it anywhere else in the country."

Just then the CB crackles with a report of a disabled vehicle that will be handled by the other van. A moment later, the cellular phone on the dash rings. It's a local radio



Monty Bancroft's impressive collection of 15 CBs, including some European units we've never seen.



Cobra's 25 LTD WX Classic—CB and weather alert ready for the road.



Samaritan Dave Plouff responds to a CB Ch. 9 call for help.



Traffic cones and the Samaritan van's bright lights help warn motorists to change lanes to avoid an accident site.

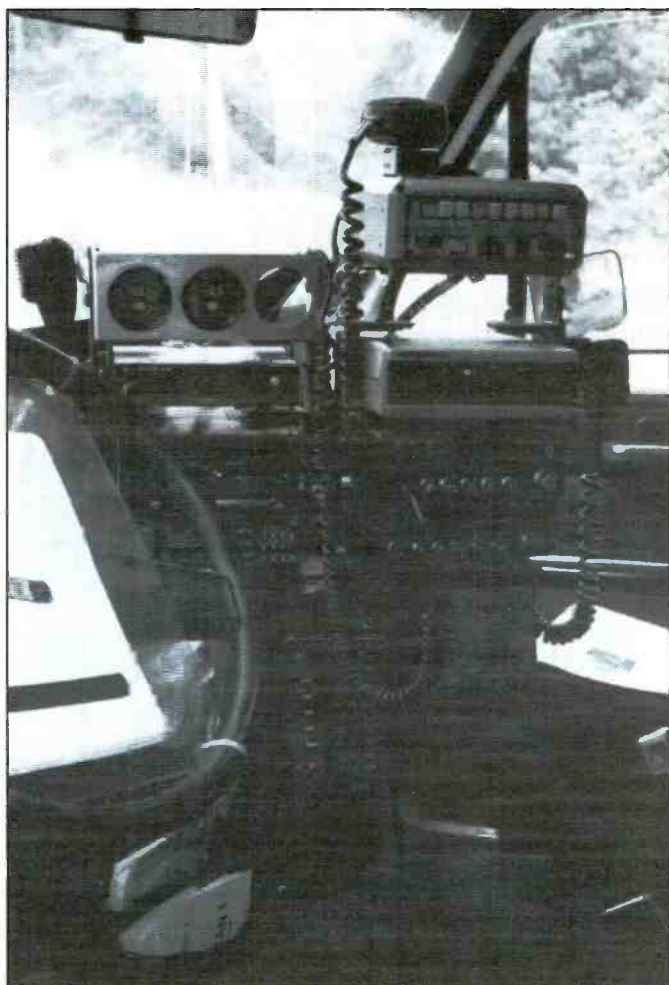
station, cueing Dave for a traffic report. Dave delivers the report crisply, professionally, while continuing to drive and reading notes off a clipboard strapped to the center of the steering wheel. He just fin-

ishes the report when we pull in behind a local transit bus pulled off on the side of the road with reflective triangles set up to warn traffic. Dave discovers they have help on the way, so we're back on patrol.

We cruise up I-90 to where it joins the New York State Thruway then back to 787 again. We are just crossing the Patroon Island Bridge construction site westbound when we hear: "Break Channel 9. We have



The Samaritan van is stuffed with supplies and equipment to respond to emergencies.



The radio tree in the Samaritan van is linked to eight antennas on the roof.

an accident on the Patrol Island Bridge Westbound." That's where we are, but we can't see it. Dave concludes it must be behind us.

The bridge is notoriously difficult for commuters because two lanes of high-speed traffic must neck down into one lane of lower-speed travel. The problem is made more difficult by traffic patterns that are frequently changing as different parts of the bridge are repaired. Wisely, authorities have assigned two state troopers and a tow truck to permanent duty on the bridge until repairs are completed.

We make a U-turn and cross the bridge again, then turn westbound again well beyond it. There is a three-car accident in the fast lane. Two State Police are already on the scene. Traffic is start-and-stop. I key the microphone and inform the Tri-County Assistance network of the hazard on the bridge. The message will be relayed to other broadcast traffic reporters in the area so that motorists who don't have CB's or ham radio will be warned of the problem.

Dave lights up the Samaritan van like a Christmas tree and pulls into the lane behind the troopers. He jumps out and begins putting fluorescent traffic cones in the road. Then he walks to the accident site. One man has a cut on his forehead but refuses medical treatment. When Dave returns to the van, I ask why he bothered to stop and put cones in the road when the authorities are already on the scene.

"It's a matter of depth perception," he says. "First, our van has more lights than the troopers. By parking behind them, we help to protect them. But even with our better lights, people can't tell from a distance whether we're moving or stopped. The cones give them a visual cue to move over." He's right. In a short while, the traffic flow, though restricted, smooths out.

And so the morning goes on: stopping, helping people, broadcasting traffic reports. The Samaritan service is free, both to the people it helps and to the radio and TV stations for which they supply traffic reports. Sometimes the work is heartbreaking—there have been attempted suicides on the bridges, cardiac arrests on the road-sides, and fatal accidents where Dave has been first on the scene. In all, he says, "It's immensely satisfying, and it would be a lot harder without the help of the CB volunteers in our area."

Cool New Gear from Cobra

Somebody at Cobra has been thinking, and they've come up with a darned good idea: a series of CBs with built-in weather alert capability.

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GOT A SCANNER? GET POLICE CALL.

anic and Atmospheric Administration (NOAA) maintains a series of 'round-the-clock radio stations that broadcast the latest weather information from the National Weather Service on seven different frequencies in the 162 MHz band. From time to time, when there is a threatening weather condition (such as a flood watch, tornado, or *what have you*), the Weather Service may broadcast a ten-second tone that alerts people to turn on their weather radios to hear a special bulletin.

Cobra's new 25LTD-WX Classic not only offers 40 channels of AM CB, but can also tune in the seven weather channels and hear the emergency alert tone. For anyone who is travelling, news of an impending weather problem is essential information to have, and it is also extremely useful for any base station operator, particularly those who monitor Ch. 9.

Here is my hands-on impression of this new rig. Hooked to a power supply in my base station, the 25LTD-WX Classic delivers the same signal strength as my Cobra 2000 base station and with good-sounding audio, too. In my Jeep, it seems largely immune to the ignition and other noises that have turned other mobil CBs into howling banshees (the noise blanker must be doing a really good job). The squelch is smooth as glass, and the weather alert really works!

I was tooling down the road listening to the CB when the tone came on. I flipped a switch and instantly got the weather bulletin. The tone alert even works with the CB turned off, *so long as there is power to the radio*. The only trick is that, if you are travelling cross country, you must occasionally switch on the weather receive and check to see which of the seven channels is coming in best. A tip of the hat to Cobra for a great idea, well executed! Average selling price of the 25LTD-WX, according to Cobra, is \$149.95. More info? Call 1-800-262-7222

Thanks for Those Cards and Letters

Ted Sorge, 514 Erna Drive, Converse, TX 78109, writes to say he's looking for an owner's manual or copy for a Robyn SB-540D base station. He'll be glad to pay for copying or swap manuals that he has. He's also looking for the old *Secret CB* issues, and has some extras to trade. Can anybody help him out?

Finally, Monty Bancroft of Sun Valley, California sent in a photo of his collection of 15 CBs, along with some kind words about this column. Thanks, Monty!

That's it for this time. Please write to me here at *Popular Communications*. ■

LISTENING POST

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

It's official. By the time you hold these pages the Voice of America's Bethany, Ohio transmitter installation will be history. Its transmitters will be shipped to the VOA relay in Sri Lanka.

And it now appears almost certain that one of the two huge transmitter sites at Greenville will be "downsized," and the receiving installation there shut down. Some 60 VOA engineers will find themselves pounding the pavement, another 80 will be cut from the programming department, and six language services will be dropped.

All this is part of the coming consolidation of the VOA with Radio Free Europe/Radio Liberty which is an attempt at being more efficient and saving money in the process. Just a couple of years ago a few zillion were spent on a new RFE/RL transmitter plant at Maxoqueira in Portugal featuring six 500 kW transmitters. Now they're going to close that down after an operational life of only about three years. Talk about efficiency and forward thinking! The number of broadcast hours and languages of RFE/RL are also to be cut. You can expect further reductions in both RFE/RL and the VOA in the months ahead.

More bad news on the American short-

wave scene. One of shortwave listening's worst nightmares—the invasion of the 60 meter band by a U.S. broadcaster—has actually happened! WWCR is now using 5065. And we have to know that now that the dam has been breached, more frequencies in this range will probably be filled, blocking reception of those nice tropical band stations. We thought there were rules against U.S. broadcasters using this range. Maybe that doesn't mean anything in this day and age.

Transmissions of Monitor Radio over WCSN in Maine ended last September when the additional antennas at WSHB became operational. WCSN has likely had a call letter change by now, reflecting its new owners, Prophecy Countdown.

Russian Radio in Decline

If things aren't real positive on the U.S. shortwave scene, they're downright bleak in Russia, where it seems there is decline everywhere you look. The Voice of Russia has had to cut back its broadcast time to just seven hours a day. Mayak Radio, at one time a 24-hour a day broadcaster whose signals could be found all over the shortwave dial, now operates on only three 60-

meter band frequencies. Any number of transmitter sites are being discontinued or cut back because funds aren't available, even to pay the electricity bills. The Russian Ministry of Finance refuses to fund state broadcasting in the country.

On the plus side—we've learned that AFAN Antarctica, inactive for several years, is again using shortwave. It is on 6160 (formerly 6012) but the schedule is uncertain (the local outlet is listed for 2000-1200, but try around 0900 or 1000). It's a real tough one to hear but at least now you have a shot at it.

Nigerian Radio, which we reported last month to be in an extremely sorry state is supposed to get a new lease on life. The government says the necessary equipment is being purchased which will enable the Voice of Nigeria to reach "all parts of the world." Supposedly this is to begin happening around the middle of the year.

Keep an ear on 4815 for the appearance of a new Ecuadorian station. Good Shepherd Radio is scheduled to be using this frequency in a couple more months, broadcasting from a 1 kW transmitter in the town of Saraguro, with programming in Spanish and the Saraguaro language.



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Schedule for the Period Winter 1994/95
Effective from 25. 9. 94 (00:00 UTC) to 25. 3. 95 (24:00 UTC)

SERVICE AREA	Antenna Type/dir. deg.	Power kW	Time UTC																								Geographical Zones CIRAf	
			0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23		24
EUROPE	omnidirectional	HQ	300	[Solid black bar]																								17, 18, 19, 27
	omnidirectional	VER	100	[Solid black bar]																								28, 29, 37, 38, 39
	SOUTH-WEST	LPH/240	100	[Solid black bar]																								30, 37, 46
NORTH AMERICA	LPH/320	100	[Solid black bar]																								7, 8, 9	
	HR/305	500	[Solid black bar]																								6, 7, 10	
AMERICA	NORTH AMERICA WEST	via RCI-relay		[Solid black bar]																								11, 12
	CENTRAL AMERICA	HRS/275	300	[Solid black bar]																								13, 14, 15, 16
SOUTH AMERICA	HRS/255	300/100	[Solid black bar]																								36, 37, 46	
	HR/265	500	[Solid black bar]																								47, 48, 52, 53, 57	
AFRICA	LPH/255	100	[Solid black bar]																								39, 40	
	WEST	LPH/240	100	[Solid black bar]																								41, 49, 50, 54
MIDDLE EAST	HR/170	500	[Solid black bar]																								43, 44, 45	
	SOUTH	HR/115	100	[Solid black bar]																								55, 58, 59, 60
ASIA	HR/115	300	[Solid black bar]																								T: 4/Ry	
	SOUTH & SOUTH EAST	HR/190	500	[Solid black bar]																								
AUSTRALIA	FAR EAST	HR/45	500	[Solid black bar]																								
	AUSTRALIA	HRS/85	100	[Solid black bar]																								
Frequencies subject to change			[Solid black bar]																									

P.O. Box 200, A-1043 Wien, Austria

VER = vertical cage

HQ = horizontal quadrant

LPH = log. per. horizontal

HR = curtain turnable

HRS = curtain slewable

Radio Austria International's current frequency schedule.

Apparently the VOA, BBC and Deutsche Welle relays via Channel Africa's Meyerton facility in South Africa have worked out so well that the station plans an expansion, just to accommodate these and possible future relay customers. So it'll add another six-100 kW transmitters in the coming months.

Deutsche Welle, meantime, is again transmitting from its Rwanda relay, although initially on a very limited basis, intended for only a local audience. Radio Rwanda had also reactivated, using a 20 kW transmitter on 6055. A third station, Radio Amahoro (peace), operated by a Belgium-based humanitarian group, broadcasts to Rwandan refugees. The broadcasts are aired, not from Rwanda, but via the Voice of Ethiopia at 0430-0500 on 9560 and via Moyabi, Gabon (Africa No. One) on 9790 at 1700-1800.

Radio Liberty (the RFE/RL one) is being relayed via the VOA relay station in the Philippines. It's scheduled on 11860 from 0700-1100 and 7230 from 2000-2200.

Turkey has a new shortwave station but your chances of hearing it may be about as good as finding Ed McMahon at your front door next Tuesday. Anadolu High School Radio is said to be operating on variable 7102 between 0600 and 1305, using a homemade transmitter. You'll have better luck tuning for Turkish Police Radio on 7370 from 0400 to 0600 and Ankara Meteorological Radio at 0400 sign on, found on 6900. These take some patience, probably many attempts, but they can be heard in North America.

The BBC has two relay arrangements not as widely known as Ascension and some others. One is on via Australia on 11965, beamed to Asia from 2200-2300. The other is from New Zealand, also directed to Asia, on the air at 1100 on 6110.

Club Note

The South African DX Club (P.O. Box 13273, Northmead 1511, South Africa) is making an attempt to increase its membership. Part of that effort involves members giving talks and demonstrations on shortwave to schools and clubs. They also have their own column in one of the national South Africa magazines. Unfortunately the monthly bulletin is quite expensive for U.S. listeners—a hefty \$42. You can get a sample issue for \$4.

Reports (etc.) Wanted

Here's our usual appeal for your participation in this column. Your loggings are always welcome. Double space items, and include your last name and state abbreviation after each one because the reports get cut into strips for sorting and editing.

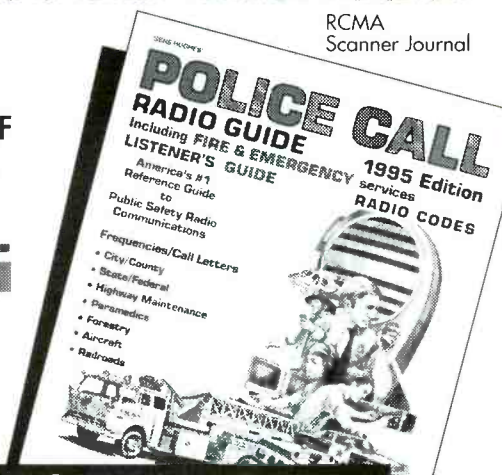
We also invite you to send any program/frequency schedules, station informational brochures or station photos you may receive. Any spare (non-returnable) QSLs

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you receive or have on hand make great illustrations. Speaking of QSLs, as noted last time, we'd like to begin including QSL news (new addresses, new card styles, card series, names of verification signers, etc), so feel free to also include such information with your station loggings.

And shack photos! Our readers like to see them in the column, but not many of you send them. Can't have it both ways!

Here are this month's logs. All times are

UTC, which is five hours ahead of Eastern Standard Time, i.e. 0000 UTC is 7 p.m. EST (and 6 p.m. CST, 4 p.m. PST). The language of broadcast is assumed to be English unless noted otherwise: FF=French, AA=Arabic, SS=Spanish, etc.

ALASKA—KNLS at 0848 on 9615. Into RR at 0858. (Jeffery, NY)

ANGOLA—Radio Nacional. 9720 in PP at 0526 with pops. African music. drums, news. (Lamb, NY)

ANTIGUA—BBC relay. 5975 at 0259. (Vaage, CA)

Cuba's Radio Rebelde is sometimes inactive on its 5025 frequency, perhaps a sign of troubled times.

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ARGENTINA—Radio Nacional (weekends only) on 15345 at 2343 in SS with radio play. IDs, pops, news. Argentine folk music. (Lamb. NY)

ASCENSION ISLAND—The relay here with VOA on 15160 at 2021; into BBC relay in PP at 2030. Also RAI, Italy relayed via Ascension on 11765//15390 at 0203 in II. (Lamb. NY)

AUSTRALIA—Radio Australia on 17795 at 0526 and 17860 at 0410. (Vaage, CA)

BELGIUM—Radio Vlanderen Int'l. 9925 at 2007 in Flemish with "Sportnieuws." news. ID, pops. Into SS at 2030. (Lamb. NY)

BENIN—Radio Parakou, 5025 at 0500 with tam-tam, national anthem, flute/drum ID, choir, mention of Benin and hi-life music. (Lamb. NY)

BOTSWANA—VOA relay on 13710 at 1913 with news, weather and "Newline." (Lamb. NY)

BRAZIL—Radio Marajoara, 4955.2 at 0219 in PP with ID, disco, time check, mentions of Brazil, sound effects, jingles, promos. (Paszkiwicz, WI)

Radio Inconfidencia, 6010 in PP at 2257 with announcements, mentions of Brazil, address, choir, commercials, IDs. (Paszkiwicz, WI)

Radio Alvorada, 4965 at 0203 in PP with ID, sound effects, mention of Amazonas, possible futbol. (Paszkiwicz, WI)

Radio Clube Paranaense, 6040 at 0914 in PP with Brazilian pops, IDs, promos. (Lamb. NY)

Radio Nacional, Sao Gabriel Cachoeira, 3375 at 0911 in PP with pops, IDs, talks, cuckoo clock. (Lamb. NY)

Radiobras, 15445 at 1235 with talks on Brazilian economy, music. (Northrup, MO)

BULGARIA—Horizont Radio, 7670 at 0402 in Bulgarian with news, harp music, ID, local pops. (Lamb. NY) (A home service relay on SW—Ed.)

Radio Bulgaria, 9700 at 0340 with jazz and political news. (Flemmer, WA) 0342 with news (illegal intervention by US in Cuban affairs) and plug for Western investment in Eastern Europe. Also 11660 at 0026 to close at 0031. (Wilden, IN)

CANADA—Radio Canada Int'l. 15305 at 2205 with news of Canada. (Dybka, TN) 15315 at 1330 with ID, news and "Spectrum." (Northrup, MO)

Canadian Forces Network (via RCI/Sackville) 6150 at 0526 with messages to members of military. (Flemmer, WA)

Radio Japan Sackville relay, 11705 at 1425 with "Media Roundup" program. (Jeffery, NY)

Deutsche Welle via Sackville, 6085 at 0322 with "DX World Meeting." (Jeffery, NY)

Radio Korea via Sackville, 11715 at 1030 with ID and news. (Jeffery, NY)

CKZN, St. John's, Newfoundland on 6160 at 1023 with old pops, time checks for Labrador, ID for CBC Regional Service. (Lamb. NY)

CHINA—China Radio Int'l. 11715 (via Mali, ed) and 11840 at 0311 with news. (Vaage, CA) 11755 at 1006 with world news and "News About China." (Lamb. NY)

COLOMBIA—Ecos del Atrato, 5019.7 at 0303 in SS with ballad, some rock, announcements and mention of Caracol network. (Paszkiwicz, WI)



Here's "Yvan" at his ham shack/listening post in Antwerp, Belgium. The shortwave receiver is a Kenwood R2000.

Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/iou/s
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

La Voz de Yopal. 5040 at 0810 in SS with Latin pops, relay of RCN Network 2, ID of "Antena dos." (Lamb, NY)

COSTA RICA—Adventist World Radio, 9725 at 1341 with SS Christian music. IS, ID, and more religious music in EE. (Lamb, NY)

TIFC. Faro del Caribe, presumed, on 6175 at 1027 in SS with Latin music with Christian lyrics. (Lamb, NY)

CUBA—Radio Havana Cuba, 6010 at 0342 with a program on making various types of shortwave antennas. Heavy QRM. (Wilden, IN) 6180 at 0412 with news. (Vaage, CA) 13700 single sideband at 0129 with news and DX program. Also 17760 at 2125 in EE with music, news update and "Time Out." (Jeffery, NY)

CYPRUS—9635 in RR at 1838 with pops, ID. Also 11730 at 1713 in AA with news, mideast music and choir during talk about Russian Orthodox Church and Islam. (Lamb, NY)

CZECH REPUBLIC—Radio Prague, 7345 at 0305 with news and ID. (Flemmer, WA)

DENMARK—Radio Denmark (via Radio Norway. —Ed.) on 15335 with news program, ID in Danish and listing frequencies. (Northrup, MO)

ECUADOR—Radio Federacion Shuar, 4860 and //4960 at 0148 with talks, news and ID. (Paszkievicz, WI) (Presume in SS or local native language.—Ed.)

HCJB. 6205 at 0347 with announcer Vladimir in RR with religious talk. (Dybka, TN) 9745 at 0357 with "Ham Talk." (Vaage, CA) New 15350 at 1724 with "DX Party Line." (Lamb, NY)

ENGLAND—BBC, 6195 at 0347 and 9515 at 1625. (Wilden, IN) 9410 at 0204. (Jeffery, NY)

FINLAND—YLE/Radio Finland, 11755 at 1941 in EE with commentary, address, "Starting Finnish" and "Nuntii Latini" (news in Latin). This is Saturday only. (Lamb, NY) 15400 at 1210 with news in Finnish. (Northrup, MO) 1330 in EE with "Compass North." (Jeffery, NY) 1354 with Finnish techno-rock. (Dybka, TN) (Don't even want to guess what that is!—Ed.)

FRANCE—Radio France Int'l, 11965//11995 at 1949 in FF with Ella Fitzgerald, Nat Cole, IS, ID, news. (Lamb, NY) 15365 at 1235 in FF with world news. 15515 (via French Guiana.—Ed.) at 1240 in FF. (Northrup, MO)

GABON—Radio TV Gabonaise, 4777 at 0501 in FF with talk, hi-life, time check, commercials, sound effects. (Lamb, NY)

Africa Number One, 9580 at 2138 in FF with US pops, African music, ID, news. (Lamb, NY)

GERMANY—Deutsche Welle, 6085 (via Canada.—Ed.) at 0352 with IS. (Vaage, CA) 6185 at 0345. (Dybka, TN) 15445 in GG at 1225. (Northrup, MO) Radio Free Europe/Radio Liberty, 7295 at 0354 in RR to sign off at 0400. (Dybka, TN)

VOA Munich relay, 3980 at 0420 in Bulgarian with

talks, pops, headlines, ID. Into Czech at 0430. (Lamb, NY)

GREECE—RS Makedonias, 9930//11595 at 1850 in Greek with pops, phone talk, ID, mention of RSM. (Lamb, NY)

Voice of Greece, 9420 at 0138 with 15 minutes of news in EE. (Flemmer, WA)

VOA Kavala relay, 9605//11750 at 1913 in AA with ID and news about Egypt and Yemen. (Lamb, NY)

GUATEMALA—Radio Tezulutlan, Coban, 4834.7 at 1130. (Schimmel, WV) (Language would have been SS or local indian.—Ed.)

HONDURAS—Sani Radio on 6299.3 in SS/EE at 0240 with time check, ID, EE reggae and SS ballads. Off at 0301. (Rausch, NJ)

Radio Copan Int'l, 15675 at 2038 in EE, into SS at 2040. (Jeffery, NY)

HONG KONG—BBC relay, 21715 at 0932 with "Poems by Post." (Flemmer, WA)

HUNGARY—Radio Budapest, 5970//9835 at 0241 with an announcement about visas, "Bookshelf," organ music and ID. (Lamb, NY)

ISRAEL—Kol Israel, 15615 at 1220 in unidentified language with phone interview. (Northrup, MO)

JAPAN—Radio Japan, 11885 at 0500 with news. (Flemmer, WA)

11895 (via French Guiana.—Ed.) at 0313. (Dybka, TN)

JORDAN—Radio Jordan, 7155//9830 at 1918 in AA with Jordanian music and ID between songs. (Lamb, NY)

KUWAIT—Radio Kuwait, 11990 at 1928 in EE with music by Count Basie Orchestra and the Modern Jazz Quartet. Then pops. (Lamb, NY)

MADAGASCAR—Radio Netherlands relay on new 11655 (formerly from Flevo) at 1952 with news, ID. "Media Network." (Lamb, NY)

MALI—China Radio Int'l. 15110 at 2013 with features, ID, "China's Open Window." (Lamb, NY)

MAURITANIA—Radio Mauritanie, presumed, 4845 at 0728 in AA with traditional local music, talks, possible ID. (Lamb, NY)

MEXICO—Radio Educacion, 6185 at 1036 in SS/EE with Mexican pops, talk about Mexican history, ID, address for reports. (Lamb, NY)

MOLDOVA—Radio Moscow, via Moldova, on new 9620 at 0315 with "News and Views" then classical music at 0330. (Flemmer, WA)

MOROCCO—VOA relay, 15410//17895//Botswana-13710 and 15445 at 1748 with "Music Time in Africa," ID, IS, news. (Lamb, NY)

MOZAMBIQUE—Radio Mozambique, 3210.2 at 0353 in PP with announcements, choir, ID, news, mentions of Maputo, counting, dance music, mbira & horn. (Paszkievicz, WI)

NIGERIA—Voice of Nigeria, 7255 at 0635 with African and world news. ID. (Flemmer, WA)

NETHERLANDS ANTILLES—Radio Netherlands Bonaire relay, 6165 at 0030 with news and weather. (Wilden, IN) 0053 with "Mirror Images." Also 17605 at 1928 with IS, ID, news, "Newline" and a documentary. (Jeffery, NY)

NEW ZEALAND—Radio New Zealand Int'l, 15115 at 0445 with "Mail Box." Moved to 11900 at 0500. (Flemmer, WA)

PAKISTAN—Radio Pakistan, 11570 at 1837 in presumed Urdu with mentions of Pakistan and Clinton, subcontinental music, Koran, anthem. Off at 1900. (Lamb, NY)

PAPUA NEW GUINEA—Radio West New Britain, 3235 at 1150 with island music and local language. (Flemmer, WA)

PERU—Estacion Yurimaguas, 6238 at 1047 with SS talk, ID, flute, echo announcements, ballad. (Paszkievicz, WI)

POLAND—Polish Radio Warsaw, 7285 at 1947 with news, sports, Chopin music. ID. (Lamb, NY)

ROMANIA—Radio Romania, 15340 at 1250 with ID, music, news in Romanian. (Northrup, MO)

RUSSIA—Golos Rossii, 9635 at 0307 with news in RR, chimes and "Golos Rossii" ID at 0400. (Dybka, TN)

Radio Rossii, 9720 at 0410 with light jazz, interview in RR. (Dybka, TN)

Radio Moscow, 12020 at 1007 with news. (Jeffery, NY) 12050 at 0301 with news. (Vaage, CA) 15335 at 1235 and 15455 at 1230. (Northrup, MO)

Radiostansiya Atlantika, 7125 at 0200 in RR with

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TAIWAN—Voice of Free China, 5950 (via WYFR, Florida.—Ed.) at 0203 with news. (Wilden, IN)

THAILAND—Radio Thailand via VOA facilities there on 15370 at 0300 in EE with IS. ID. international and Thai news, business, entertainment and sports. (Rausch, NJ)

UKRAINE—Radio Ukraine Int'l, 7285//9685//9860—recently reactivated frequencies after station finally got its power bills paid—at 0032 in EE. All three also in EE at 0300. 15135 at 1426 in UU with folk, big band music. ID. feature. (Lamb, NY) 15580 at 0030 with a variety of news features. (Flemmer, WA)

UNITED STATES—Voice of the OAS, off shortwave for a while, has returned. Noted on VOA facilities 9670 (Greenville)//11730 (Bethany)//15155 (Greenville) at 2245 with "The Americas Today." (Lamb, NY)

VATICAN—Vatican Radio, 7335 at 0143 with features, choir. ID. EE to Asia. heard over CHU. (Paszkiwicz, WI) 7338, probably nominal 7335, at 0131 with folk music. IS. into EE for India at 0140. 9500 at 1745 in presumed Slovak with religious talks, flute music. ID. IS. 11625 at 2039 in FF with church news. ID. African choir. IS. (Lamb, NY)

And that covers it for this month! Raise your glasses, tip your hats and give three cheers to the folks below who did the good thing this month:

Jill Dybka, Nashville, TN; Marie Lamb, Brewerton, NY; Ed Rausch, Cedar Grove, NJ; Susan Wilden, Columbus, IN; Sheryl Paszkiewicz, Manitowoc, WI; Del Flemmer, Tacoma, WA; Mark A. Northrup, Gladstone, MO; Don Schimmel, Hedgesville, WV; Dave Jeffery, Niagara Falls, NY and Bjorn F. Vaage, Granada Hills, CA.

Thanks to each of you! Until next month, good listening!

announcements. IS. "Govrit Murmansk Radiostansiya Atlantika" ID. news, music. ID. interview. (Paszkiwicz, WI)

SAUDI ARABIA—BSKSA, 15060//15175 at 1406 in AA with traditional AA music. ID. presumed feature, news. (Lamb, NY)

SEYCHELLES—BBC relay, 9630 at 2030 in PP with Big Ben. ID. world news. (Lamb, NY)

SOUTH AFRICA—Channel Africa, 3220//5955 at 0422 with promo. railroad feature, ID. music. Also 5965 at 0435 with PP pops, ID. remote report. (Lamb, NY)

SPAIN—Spanish National Radio, 9540 at 0001 with news and visitor's list. (Wilden, IN)

China Radio Int'l relay, 9690 at 0030 "Commuting in China." (Flemmer, WA)

SUDAN—Sudan National Broadcasting Corporation, new 9200 at 1855 in EE with ID, regional news, medium and shortwave frequencies. into AA at 1900. (Rausch, NJ)

SWEDEN—Radio Sweden, 9850 at 0345 with "60 Degrees North." (Flemmer, WA)

SWITZERLAND—Swiss Radio Int'l, 3985 at 0356 with IS. ID and into FF with US and FF oldies. (Lamb, NY) 6135 and 9550 at 0407 with news. (Vaage, CA) 11620 (via Fr. Guiana.—Ed.) at 0445 with "Business as Usual." (Flemmer, WA) 15430 at 1245 in believed FF. (Northrup, MO)

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CIRCLE 96 ON READER SERVICE CARD

CIRCLE 65 ON READER SERVICE CARD

CLANDESTINE COMMUNIQUE

WHAT'S NEW WITH THE CLANDESTINES

Let's begin with a couple of updates to information presented last month. The anti-Castro clandestine Radio Frente Nacional Cubano didn't have much of a run. It was soon busted by the FCC. In something of a new twist for anti-Castro outfits, Frente Nacional was found to be operating from Puerto Rico, specifically from a cattle ranch called "Hacienda Las Carolinas," located near the town of Salinas. The owner is Domingo Saderni Sr., who is described as a millionaire and a board member of the Cuban American National Fundacion (which produces the "Voz de Fundacion" anti-Castro program). "Frente" was using a seven kilowatt transmitter operating on 7020. Interestingly, the FCC did not confiscate the station's equipment.

Radio Marti, the government's own anti-Castro broadcast service has increased its schedule. Additional broadcasts are now airing between 2300-0000 on 11950 and 0000 to 0200 on 11910. Radio Marti is also being relayed on 1020 medium wave by Caribbean Christian Radio, located in the Turk and Caicos Islands. Like many of the other anti-Castro programs and stations, Cuba is trying to jam Radio Marti on most, if not all of its frequencies.

It is still a good idea to make regular checks of Radio Miami International (9955) and Radio Copan International (Honduras) on 15675, as well as other U.S. commercial and commercial religious broadcasters. The appearance of additional or new anti-Castro programming on these outlets wouldn't be the least bit surprising. When

Castro does go and this paid programming is lost, some of these stations will experience a big dent in their bank accounts.

The U.S. government's anti-Haiti broadcast effort, Radio Democracy, has now been logged in the U.S. Pirate/clandestine. Author and expert George Zeller was one of the first to snare this on its 1035 kHz medium wave channel from his location in Ohio. A highly directional medium wave loop antenna helped do the trick. We understand it has also been heard by monitors in Kansas, Massachusetts, and North Carolina. Sign off, most recently, has been occurring around 0130. It may be that Radio Democracy has been discontinued by now but, on the other hand maybe not, what with the government's tendency to keep things going long after there's any common sense reason.

Colombian clandestine Radio Patria Libre was noted in upper sideband on 15047 at 2105 (this may have been on a weekend). The reporter noted that there were breaks in the transmission which he attributed to power outages.

There've also been reports of an apparent Colombian clandestine on 6626 variable, around 0030, which is the usual broadcast time for Patria Libre. This is worth checking on, especially to discover if Patria Libre is on and using one of its lower 6 MHz channels at the same time—i.e., the 6.7 to 6.32 area (approximately!).

Here's the current schedule for the Voice of Human Rights and Freedom for Iran: 0600 to 0755 on 9350, 11470 and

15145; 0600 to 0640 on 9350 and 11650; 1545 to 1620 on 9350 and 11650 and 2000 to 2155 on 9350, 11470 and 15620. The latter two time periods offer the best chance for North American reception of this station, which has been heard by many monitors here.

Again being reported is the National Radio of the Saharan Democratic Republic, at 2230 on 11800, all in Arabic.

The Voice of Rebellious Iraq has a somewhat variable schedule which runs from 0330 to 0600, 0730 to 0930, 1100 to 1430 and 1500 to 1730 on a frequency (also variable) of 7070. The station is the mouthpiece of the Shi'i Supreme Assembly of the Islamic Revolution in Iraq (SAIRI) and broadcasts in Arabic and Kurdish. The station gives an address of P.O. Box 1959/14144, Tehran, Iran. The organization opposes the current government in Baghdad.

Another Iraqi clandestine, Voice of Iraqi Kurdistan broadcasts at 0245 to 0330 in Kurdish, 0330 to 0400 in Arabic, 0930 to 1100 in Kurdish, 1445 to 1530 in Arabic and 1530 to 1645 in Kurdish, all on variable 4180. It speaks on behalf of the Kurdish Democratic Party.

That's our look at the secret and not-so-secret world of the clandestine broadcasters for this month. Don't forget that we do want and appreciate any loggings of clandestine stations or news of them (schedules, etc) you may run across. Also any interesting background information, news clippings, etc.

Until next time, good hunting! ■

1945  ۱۳۲۴

Democratic Party of Iranian Kurdistan

Parti Democratique du Kurdistan d'Iran

حزب دمکرات کردستان ایران

حیزبی دیموکراتی کوردستانی ئێران

The Democratic Party of Iranian Kurdistan is one of several Kurdish political parties seeking some sort of independent Kurdish state. Many of these groups have their own clandestine stations but they are all hard to hear from North America.

PIRATES DEN

BY EDWARD TEACH

FOCUS ON FREE RADIO BROADCASTING

Back we are and on we go with another wrap up of what's happening in the world of pirate broadcasting.

Mick Slater, of Indiana, found VVRN—the Vietnam Vet Radio Network at 0527. Unfortunately, Mick forgot to include the frequency in his report. He says they gave an address of P.O. Box 20729, Portland, Oregon, and the program was mostly music, with some “rather bizarre songs, including one called ‘The Iguana song’ and ‘Same the Snake.’” Mick notes that it must have been widely heard as the signal was very strong at his location.

Laser Hot Hits Radio was logged by Mike Welsh, in Ontario, on 7415 at 2327. This station uses Box 293, Merlin, Ontario, NOP 1WO, Canada as its address.

Right after that log, Michael had KREKER International, about 2332 with commercial rock, announcing the Blue Ridge Summit address. There was heavy interference on this one.

Benjamin Jackson, of Massachusetts, heard the K2000 Radio Show at 0020 on 7385 USB, hosted by “Bob Grope.” Benjamin monitored the station that was carrying song parodies, a history of the first pirate broadcaster, and a “Cops” parody, until 0055.

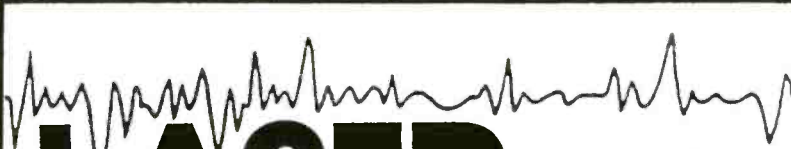
Harry Betts, Illinois, reports WRFW—Radio Free Wiggie—on 7376 at 0002 to 0029 closing. Host “Dick Bender” played rock and a sort of science fiction program.

Betts also had WKND at 0020 on 7465 with the slogan “we’re kanine Dog” (I guess the “kanine” is intentionally misspelled) with rock, commercial advertising spoofs, and talks. Announces the Blue Ridge Summit QSL address.

KDED found its way into George Roberts’ Pennsylvania shack at 0100 on 7470 with Grateful Dead slogan, “all Grateful Dead all the time.” I noticed somewhere this station has also appeared on 13900, an unusual area for pirate activity.

Roberts also heard Midnight Radio at 0103 on 7378 with hosts Slam and Zwol with music and various comic commercials, parodies on various subjects, something about scanner radios, even a couple of phone calls on what they called their “Midnight Line.”

High Times Radio was logged by Jack Sheldon in Michigan at 0200 on 7465



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Laser Hot Hits QSLs' via the Merlin, Ontario address.

with hosts Captain Ganja and Samantha Jones with music, and plugs for "High Times" magazine, "I'm getting high on High Times Radio, are you?" slogan. (This is one of several pirate stations supporting the use of drugs—and I don't mean what's available at your local Rexall.—Ed)

Sheldon also heard Altered States Radio, at 0345 on 7470. An interval signal taken from the "Outer Limits" TV show theme, host William Hurst playing various rock selections. This station is QSL'd via the Merlin, Ontario address given above.

Betts also logged something called Anti-Voice on 7470 at 2335 with music and sound effects. The broadcast started out using AM mode, but later switched to lower sideband. ID'd as "Anti-Voice is calling."

Black Liberation Radio was heard by Betts on 7415 at 0055, relayed by Solid Rock Radio. Talks and interviews on various topics including guns, the Waco tragedy, drug laws, and so on.

Radio 13 International was spotted by Kevin Jordan, in Pennsylvania at 0240 on 7470 in the midst of a broadcast of the old "The Shadow" radio program. Later had some talk in German and Spanish, also played jazz before signing off at 0318.

Jordan also logged Radio Free Euphoria at 0015 on 7375, upper sideband. The program featured many rock numbers, and host Captain Ganja "broadcasting from the garden of herbal delights in the state of euphoria." Also, station IDs done by several other pirate broadcaster hosts, including Phil Muzic (of KNBS.—Ed).

Solid Rock Radio was heard by Roberts on 7415 at 0235 with what was termed as a special test broadcast of a home-built 500-watt transmitter. They had soul and rock things, IDs by various people, and parody commercial announcements. They ran to 0325 close.

Radio Garbanzo, with Fearless Fred and Harry P. Ness hosting, was heard by Jordan on 7412 at frequency 2320 with rock, parody commercials and so on, "broadcasting from the "Ethel's Buns Truck" (and pretending it was actually travelling). Included something about doughnuts saving them from the police.

Thanks to all who checked in with logs this month. I'd sure like to hear from more pirate fans! Send me pirate logs and any other tidbits of news you hear about. Your contributions are important! See ya' all next month!



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BROADCAST DX'ING

BY TIM KRIDEL

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

This Talk Ain't Cheap: In early September 1994, WCKS Broadcasters, Ltd., was served a Notice of Apparent Liability for a 1991 violation of Section 1464 of Title 18 by its Karns, Tennessee, station, WWZZ-FM (now WWST). On the morning of April 10, "Z-93" aired promos in which it was maintained that, among other things, the station had the "balls [needed] to rock hard." An FCC press release detailing the circumstances leading up to the forfeiture contains a transcript of two graphic skits in which a competing station, named "Mister 1-0-4," is found by both a doctor and a judge to have (putting it mildly) small genitalia.

After being taken to task in early 1992 by the FCC, the station contended that the spots were intended "to simply [sic] poke fun at the wimpy music being played" by a competing station. Faced chiefly with violating the rules prohibiting broadcast of indecent material between 6 a.m. and 8 p.m., the station defended its timing by arguing both that, at 10:30 a.m., on a Wednesday morning, any minors would have been in school, and that, at any rate, there was a lack of "clear and unequivocal [FCC] guidelines defining indecency and prescribing the times and circumstances when such material may be broadcast."

Not dissuaded, the Commission, which recently had its maximum per violation forfeiture raised by Congress from \$2,000 to \$25,000, arrived at a \$4,000 fine feeling the skits, in context, were "patently offensive" and that this amount would, "in the circumstances of this case, provide a reasonable yet effective sanction and deterrent." Oddly enough, the Commission further qualified the amount by stating that "a higher forfeiture is [not] necessary or appropriate, given the limited scope of the apparent misconduct involved."

The FCC's ruling notwithstanding, sex continues to sell, even when packaged in a form somewhat more palatable to the Commission—frank discussions about sex, love, and relationships, à la Dr. Ruth Westheimer. In the years since the first appearance of "Dr. Ruth" and the subsequent clones and knock-offs, the M.D.s and Ph.D.s have given way to less credentialed and more colorful hosts, and though the faces may be straight, nevertheless the tongues are planted firmly in cheek. Seka is taking time away from her successful

→
New to the Evergreen-Denver dial is alternative rocker KXPK—'96.5 The Peak.' The station used downtown Denver's 'A Taste of Colorado, Festival of Food and Plain' as an opportunity to introduce itself. (Courtesy Dave Bartlett, N0CQC, Littleton, Colorado.)

Pending AM Call Letter Changes

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KBOA	KOTC	Kennett, MO
KING	KINF	Seattle, WA
KSAC	KSQR	Sacramento, CA

Rescinded AM Call Letter Change

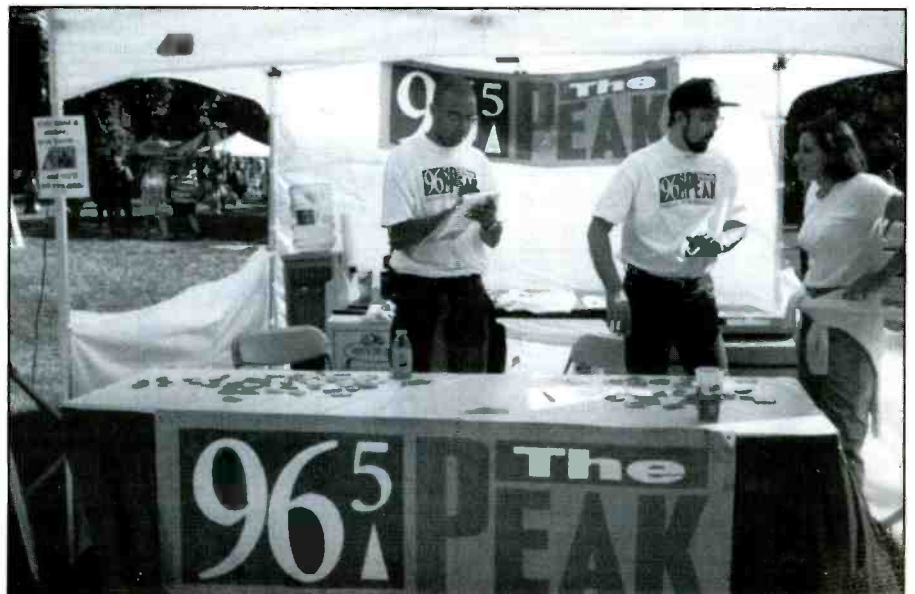
Now	Rescinded	
WRUS	WBVR	Russellville, KY

Pending FM Call Letter Changes

Now	Seeks	
WPZX	WYBR	Big Rapids, MI

Changed FM Call Letters

New	Was	
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KFRR	KFCL-FM	Woodlake, CA
KMXS	KXDZ	Anchorage, AK
KNUQ	KILU	Pauilo, HI
KSUR-FM	KKHI-FM	Greenfield, CA
KTDO	KAGF	Columbia, CA
KTHX-FM	KIZS	Carson City, NV
KUNA-FM	KUNA	La Quinta, CA
KXBZ	KTDF	Manhattan, KS
WAEZ	WSJ-FM	Elizabethtown, TN
WEZG	WQXM-FM	Gordon, GA
WGBM	WUSK	Jefferson City, TN
WJOI	WRGV	Mischicot, WI
WJXB	WAQK	Germantown, TN
WKRD	WEZK-FM	Knoxville, TN
WMYC	WKRQ-FM	Mobile, AL
WNAP-FM	WAHV	Mobile, AL
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WWSH	WKMF-FM	Tuscola, MI
WYSK	WSKS	Pittston, PA
	WPLC	Spotsylvania, VA



pornographic film career to field calls on her weekly three-hour sex-talk show on Chicago's WLUP-FM, and Riki Rachtman, when he isn't hosting MTV's "Headbanger's Ball," is offering his own brand of sex therapy on Pasadena's KROQ-FM. With titles like "Passion Phones," "Love Phones," and "Loveline," the shows apparently come as a relief for stations seeking something besides the usual non-descript syndicated talk fare to fill the less-than-prime late night and overnight hours. Still, as one program director told *Broadcasting & Cable*, such shows, from the clinical to the risqué to the ridiculous, "are meant to inform and educate. They answer a lot of questions for callers and make a lot of people feel comfortable with their sexuality. And if we can make people feel comfortable, we've done a service to the community."

The Changing Face of Radio, Part II: As we reported a few months back, FCC Chairman Reed Hunt, speaking at the 1994 National Urban League Conference, concluded that the Commission's "1993 Broadcast and Cable Employment Report" illustrated an "insufficient movement toward our goal of ensuring that the broadcasting and cable workplaces look more like the American workforce as a whole." At a mid-September convention of the National Association of Black Owned Broadcasters, Vice President Al Gore picked up the theme, calling the paucity of minority owners "a disgrace." Promising that "we will do better," Gore applauded the FCC's creation of set-aside programs that favored minority interests in the mid-summer auction of Personal Communication Service (PCS) spectrum licenses. "There is nothing that made me happier," he told the attendees, "than to see the FCC take [such] historic action...to make sure that minorities can compete effectively."

The Clinton FCC would appear to be taking its direction from the Supreme Court's 1990 decision upholding such federal affirmative-action programs since, as then Justice William Brennan Jr. wrote, such efforts would promote diversity on the airwaves. The sticking point—one that is sure to be made when the issue of set-aside programs appears on this term's docket—is how ownership determines content. The holder of a PCS license is simply the owner of a cellular-like phone service, never intended to be broadcast to an audience, and as such neither controls nor even concerns itself with what is transmitted. The holder of a broadcast license, however, has a direct impact on what is broadcast. If the intention is to promote diversity with regard to content, one would expect that set-aside programs would be initiated in the allocation of broadcast licenses. Look for just such an argument to be made when licenses for the expanded AM band begin to be made available.

The call for equal opportunity and diversity is making itself felt in other ways as

Applied for Permits to Construct New FM Stations

MN	Babbitt	106.7 MHz	19.8 kW
OR	Family Camp	107.1 MHz	45 watts (KSKD booster)
TN	Chattanooga	97.3 MHz	1 kW (WXXJ booster)
WY	Powell	104.1 MHz	78 kW

Permits Issued to Construct New FM Stations

CA	Antioch	105.3 MHz	325 watts (KITS booster)
CA	Walnut Creek	99.7 MHz	186 watts (KFRC-FM booster)
CO	Boulder	96.5 MHz	500 watts (KXPK booster)
IL	Carlyle	96.7 MHz	6 kW
IN	New Albany	94.7 MHz	3 kW
MO	Cuba	90.3 MHz	7.04 kW
NM	Clovis	106.5 MHz	60 kW
NM	Grants	92.7 MHz	50 kW
OR	Coos Bay	93.5 MHz	2.5 kW
TX	Centerville	103.1 MHz	1.9 kW

Cancelled

KRAQ	Jackson, MN	105.7 MHz	3 kW
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Seeking Modified AM Facilities

KBIL	Breckenridge, TX	1430 kHz	Seeks nights with 97 watts.
KDSN	Denison, IA	1530 kHz	Seeks nights with 12.5 watts.
KOMY	Watsonville, CA	1340 kHz	Seeks 1 kW/250 w. power rating.
WHND	Monroe, MI	560 kHz	Seeks 500/13.9 w. power rating.
WNTY	Southington, CT	990 kHz	Seeks nights with 80 watts.

Modified AM Facilities

WCEN	Mt. Pleasant, MI	1150 kHz	Deleted night service.
WINE	Brookfield, CT	940 kHz	Reduced day power to 680 watts.
WKNW	Sault Ste. Marie, MI	1400 kHz	Increased power to 1 kW.

Seeking Changed FM Frequencies

WGGD-FM	Melbourne, FL	102.3 MHz	Seeks 95.1 MHz, 6 kW.
WRRX	Micanopy, FL	97.7 MHz	Seeks 97.3 MHz, 13.5 kW.

Changed FM Frequencies

KCTT	Yellville, AR	97.7 MHz	Moved to 101.7 MHz.
KKBI	Broken Bow, OK	106.1 MHz	New freq., not known at press time.
WKMD	Loogootee, IN	94.1 MHz	Moved to 93.9 MHz.
WSHV	South Hill, VA	105.5 MHz	Moved to 98.9 MHz, 15 kW.
WWUN-FM	Clarksdale, MS	101.7 MHz	Moved to 101.5 MHz, 25 kW.

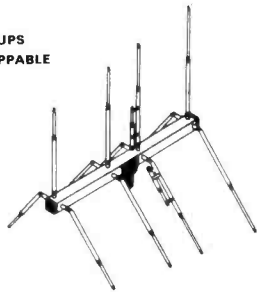
Changed AM Call Letters

New	Was	
KAHS	KBBY	Ventura, CA
KISO	KYOT	Phoenix, AZ
KKHI	KTID	San Rafael, CA
KLDY	KNTE	Lacey, WA
KOBB	KZLO	Bozeman, MT
KTMA	KRED	Eureka, CA
KUNA	KBZT	Indio, CA
WEZK	WZWZ	Knoxville, TN
WFAV	WNUE	Ft. Walton Beach, FL
WFIL	WPHY	Philadelphia, PA
WHLY	WIWO	South Bend, IN
WNZE	WYTA	Largo, FL
WOTS	WMJK	Kissimmee, FL
WTOU	WSLR	Akron, OH
WVAO	WANV	Waynesboro, VA
WWTM	WVEI	Worcester, MA

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Wikes Barre, Pennsylvania is home to WKRZ-FM. According to Mary Theresa Notaro of Hazelton, Pennsylvania, this boom box really plays, with the center portion serving as the booth for live remotes.

well. According to an article in *Broadcasting & Cable*, St. Louis-area broadcaster KFYO-AM-FM is facing the very real possibility of having its license renewal denied following efforts by local chapters of the NAACP. The group alleges—and the FCC's Mass Media Bureau agrees—that on several occasions in 1989 the station flouted Equal Employment Opportunity (EEO) rules. In its recommendation to an agency administrative law judge, the Bureau argued that the violations, "and the attempt to cover [them] up by disingenuous statements designed to mislead the commission's staff, warrant nonrenewal."

New York City's WAXQ-FM is another broadcaster to have come under scrutiny for alleged EEO violations. GAF Broadcasting, licensee of the former WNCN, faced non-renewal when an organization calling itself the Listeners' Guild filed a petition challenging GAF's EEO practices at the station. The two subsequently settled their differences in an agreement whereby GAF pays the Guild \$110,000 and allows the group access to the WNCN Listeners' Club mailing list for two years. While the settlement resulted in both the Guild withdrawing its suits and the FCC granting GAF's application, final approval of renewal



The Sunwapta building contains the studios of three Edmonton, Alberta stations, including 'The Bear,' which celebrated two years on the air on September 30, 1994. Faithful reader Trevor Fletcher, also of Edmonton, reports that The Bear has made good on its promise to play a lot of Canadian music.

Newly Issued FM Call Letters

KAIS	Kennwick, MO
KAIU	Grants, NM
KAIW	Wheeling, MO
KBHZ	Willmar, MN
KKFX	Lowry, SD
KSXX	Marysville, CA
WAIZ	Seneca, IL
WOWZ	Whitesboro, NY
WZGK	German, PR

hinges on further Commission investigation into the station's EEO practices.

Not a Pretty Sight: A billboard sponsored by Nashville rocker KDF to promote Jacky's sophomore album caused quite a stir in Music City. Aside the phrase "We're Back!" is a shot of the group's members—and the exposed derriere of lead singer Jesse James Dupree. The ad, located near the center of town along Interstate 40, shocked enough passing motorists that the billboard's owner, at the behest of the Nashville Department of Transportation and the City Council, was forced to paste a black box with the word "CENSORED" over Dupree's rump. The singer's take on all the fuss was, "Nashville's covered with billboards of country artists. But we go and

put up our rock 'n' roll billboard and it's like a turd in the punchbowl."

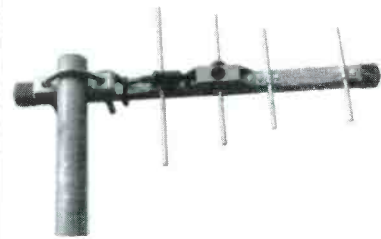
An Eleventh-Hour Reprieve?: In the December 1994 column we reported that KOA's licensee, Jacor Broadcasting of Colorado, had been assessed a forfeiture of \$2,500 for a violation of FCC rules governing licensee-conducted contests. On the same day that the fine was announced, the U.S. Court of Appeals, District of Columbia circuit, in a separate case set aside the current forfeiture standards. As a result, the FCC has reinstated Jacor's petition for reconsideration.

Better Border Broadcasting: The U.S. and Mexico agreed in late September 1994 to establish ten channels in the AM band of 1605 to 1705 kHz. New, top-end broadcasters within 450 km of the common border will be permitted to run no more than 10 kW day and 1 kW night. The goals are to reduce interference—crowding—in the present AM band and to improve the overall quality of AM broadcasting.

At the same time, the two countries replanted their 1972 accord governing the FM band with an agreement that will afford more flexibility in allocations by establishing standards that are in keeping with current domestic guidelines, as well as offering the individual broadcasters the opportunity to upgrade their facilities. As explained in an FCC press release, the FM agreement was designed to foster "an ex-

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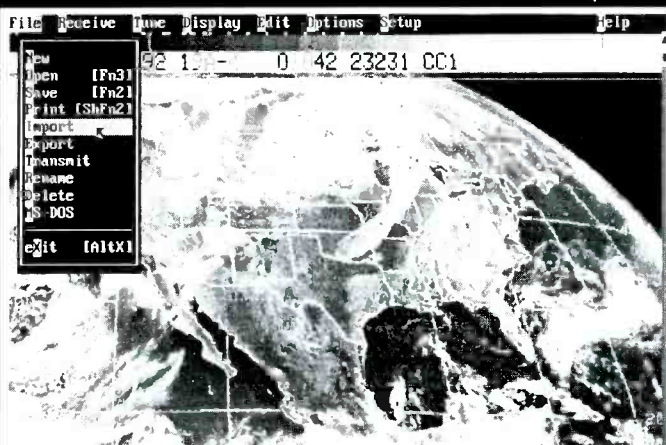
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CIRCLE 69 ON READER SERVICE CARD

February 1995 / POPULAR COMMUNICATIONS / 61

panded variety of programming available to the public," and, as with the Expanded AM Band agreement, improve the quality of service. FCC Chairman Reed Hunt praised the two compacts, saying, "The completion of these Agreements illustrates the outstanding spirit of cooperation between our two Governments."

Growing and Gobbling: In step with an industry trend is the growth of American Radio Systems, a Boston-based radio group that has in less than a year after its inception established a strong foothold in several Northeastern markets. *Broadcasting & Cable* reports that in mid-September the group inked a deal with Chemical Equity Associates and ABS Capital Partners to increase their credit line to \$150 million. Already the group has put the money to work, purchasing Buffalo, New York's WECK-AM and WJYE-FM, for \$39-million, where their stable already includes WYRK-FM. The privately held American Radio Systems, which now owns 10 AM and 15 FM stations, is the result of a 1993 merger of Atlantic Radio, Stoner Broadcasting, and Multi Market Communications.

Two of American Radio Systems' more prominent holdings are Boston's WRKO and WHDH. At the end of August, WHDH ceased operations on 850 kHz. The frequency is now home to WEEI, which left 590 kHz for the new channel and a ten-fold increase to 50 kW. According to reader Harvey Novack of Somerville, Massachusetts, a business talk format is now in place on 590 kHz, under the call letters of WBNW. Although "Business 590" will be a member of the Bloomberg News Radio network, the station will cover local business news, as well as traffic, weather, and sports. WEEI announcer Dale Arnold was ecstatic about the change, saying, "We've got a whole new lineup. We've got a whole new frequency. We've got lots of power." The changes also include several of the WHDH talk shows—among them Rush



Here's another view of the Sunwapta building, complete with totem pole, submitted by Trevor Fletcher. For a view of another Edmonton landmark, the Fletcher shack, see the October 1994 installment of our sister column, 'CB Scene.'

Limbaugh, Howie Carr, and Jerry Williams—moving to sister station WRKO. Additionally, while WEEI retains its all-sports format, the Bruins will be carried by WBNW.


But apparently not everyone was happy with the shuffle and ensuing demise of WHDH, which first took to the air in 1926. The station closed operations with "Taps," followed by the sound of a flushing toilet. American Radio Systems marketing director Frank Murtaugh attributed the flush to a "disgruntled producer." Our thanks to long-time reader Herb M. Siegel of Chelsea, Massachusetts, for information from the Boston Herald, and to Jim Dionne, K1MEM, of Sudbury, Massachusetts, for articles from the *Boston Globe*.

Up and Running: According to articles in the Maine newspapers *Waterville Morn-*

ing Sentinel and *Bangor Daily News* submitted by Don Hallenback of Pittsfield, Maine, WPBC-FM was launched in late August 1994. In addition to an adult contemporary format, the station is devoting much airtime to local sports and events, through live remotes. The Pittsfield broadcaster, known as "Power 99.5," had been slated to commence operations nearly a year earlier, but the theft of 11 20-foot sections of the antenna tower proved a major setback. The station is owned by Action Communications, with a mailing address of P.O. Box 121, Pittsfield, Maine 04967, and a phone number of 1-(800)-995-HITS.

Bits and Snippets: A late-September article in *Broadcasting & Cable* reported negotiations were underway for Tribune Radio Networks to purchase the Interstate Radio Networks. The overnight, trucker-oriented programmer signed 60 affiliates since its debut in 1988...Infinity Broadcasting is set to purchase Dallas' KLUV-FM, for nearly \$51-million, pending FCC approval. The group's other Dallas FM holding is KVIL-AM-FM...Paul Harvey is still going strong after all these years. According to the spring 1994 network radio ratings, 5.8-million listeners tune in each weekday morning to hear the rest of the story. 4.4-million catch his midday show, and 3.2-million listen to him on Saturday mornings...As of August 31, 1994, there were 4,923 AM and 5,070 FM stations, in addition to 1,708 FM Educational and 2,233 FM translators and boosters.

Thanks: To all the aforementioned readers who helped make this column what it is. Want to see your name in print, too? Then send along news clippings, station and shack photos, QSLs, and bumper stickers. I'll be looking for you. Until then, 73s.



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COMMUNICATIONS FOR SURVIVAL

High Frequency Coast Guard Doctor's Advice

Emergency communicators may sometimes deal with a response where only long-range radio can effect the rescue. Emergency medical technician Rick Graves of Medical Safety Management, Inc., in Southern California was tuning around on his ham set when he came across a maritime mobile station calling Mayday in need of medical advice. It seems that one of their crew members in the South Pacific stepped on a scorpion fish, and the captain of the ship needed medical advice on how to treat this extremely toxic puncture wound.

"In less than five minutes, we had that ship in touch with the United States Coast Guard flight surgeon who gave them specific instructions on the emergency treatment of the wound," comments Graves. "I had the U.S. Coast Guard phone numbers right in front of me when the call came through—and that's why things went so quick," adds Graves.

Coast Guard Region Telephone No.

Coast Guard Pacific	(310) 980-4400
Coast Guard Alaska	(907) 463-2000
Coast Guard Atlantic	(212) 668-7055
Coast Guard Gulf Region	(504) 589-6225

Emergency communicators should keep the above numbers handy. If you hear a marine emergency call on worldwide amateur or marine single sideband, dialing the Coast Guard facility that serves a particular area where the call may come from will get the emergency medical plan into action.

The following frequencies are also available to call up the United States Coast Guard to bring on a flight surgeon who can give out medical information:

Ship Transmit	Ship Receive
4134 kHz TX	4426 kHz RX
6200 kHz TX	6501 kHz RX
8240 kHz TX	8764 kHz RX
12242 kHz TX	13089 kHz RX
16432 kHz TX	17314 kHz RX

These are duplex frequencies scanned by United States Coast Guard rescue coordination centers and communication stations throughout the United States for long-range emergency over high frequency SSB. These frequencies are reserved exclusively for maritime mobile stations, and may not be used for land accidents. Ship stations transmit on the lower frequency, and monitor on the higher frequency within each band. Ships placing a general medical request call to the U.S. Coast Guard on these duplex working channels should make their call at least 45 seconds long, i.e. "Calling Coast Guard communications, calling Coast Guard communications, etc... this is the vessel...this is the vessel...etc."



Although 2.182 kHz is the distress channel, a long range call is best placed on Coast Guard duplex channels.

"We scan our working channels at each one of our communications centers, and it takes a relatively long call for us to engage our system to respond to the calling ship station," comments a U.S. Coast Guard official from San Francisco. "Ship stations should repeat their approximate geographic position several times so we can coordinate the strongest station to respond," adds the Coast Guard.

Occasionally the U.S. Coast Guard may be tied up with other communications and not hear the call at all. This is where a phone call to one of their regional communications systems by shortwave monitors may alert them that they have traffic on frequency.

"We can dial into amateur frequencies, too, in case the mariner doesn't have a marine SSB transceiver onboard," adds the Coast Guard. Since the Coast Guard doesn't monitor ham channels, it takes a phone call from an emergency communicator to alert them where to tune in to handle a medical distress call.

The U.S. Coast Guard will bring on line their local flight surgeon who can determine what the medical call is about, ascertain whether or not an evacuation is possible via helicopter, or recommend lifesaving steps over the airwaves. The U.S. Coast Guard can also divert any other big ship in the area with medical facilities aboard to come to the rescue of someone in trouble out on the high seas.

"We even have the free medical consultation services of Cirm Roma in Italy—the only hospital in the world that gives out free emergency medical advice to boaters all

over the world," says the Coast Guard.

All shortwave radio listeners should keep these Coast Guard numbers available in case they tune into a request for a Coast Guard station to come on the air. Within two minutes, a powerful Coast Guard signal will come on the air and be ready to handle the maritime emergency call.

And for local emergency calls heard on a VHF scanner or marine VHF transceiver, you would contact your local United States Coast Guard office to report the reception call. Do you have that number handy? And for long range, you now have the numbers to call.



Three important pieces of equipment for a Coast Guard emergency medical technician.

NEW PRODUCTS

REVIEW OF NEW AND INTERESTING PRODUCTS



Scout Automatically Finds/Records Frequencies and Tunes a Receiver!

Optoelectronics Inc., of Ft. Lauderdale, FL, announces a new product for the security, surveillance, law enforcement, and hobby monitoring markets. The Scout represents a departure from the test instrument market because it is not intended for measurement or calibration purposes. Instead, the Scout is the first handheld device intended solely to detect radio transmitters in the near field.

For walk-by applications, the Scout can automatically detect and record 400 unique frequencies and up to 250 repeat hits on any that were previously recorded. When used with the miniature DB32 antenna the Scout will fit in the pocket, operating in a completely automatic mode, and will signal the operator when a frequency is recorded with a pager style vibrator. After recording, the Scout data can be downloaded into a computer using software supplied and an optional TTL to RS-232C interface converter. Third party software is being developed to check Scout frequency data against the FCC data base on CD ROM. To monitor those frequencies recorded, a CI-V capable communications receiver (such as the OS456 equipped PRO-2005/6, OS535 equipped PRO-2035, Icom R7000 or R7100) can be connected to the Scout and tuned to each recorded frequency in Recall Mode.

In Drive-By mode, the built-in beeper signals when the Scout records a new frequency with a double beep. A single beep indicates a hit on a previously recorded frequency. Since the Scout is completely automatic, the driver is not distracted, and can monitor its operation through audible beeps. Reaction tuning a receiver in a drive-by operation provides instant hands free

monitoring of the detected transmissions.

To distinguish actual radio frequencies from background noise, the Digital Filter/Capture technology (patent pending) developed by Optoelectronics is used. The beeper and electroluminescent LCD back light are switch selectable on power up. The back light times-out to conserve power and extend life. When a frequency passes the Digital Filter, the back light is automatically switched in for ten seconds. The beeper operation is described above. The vibrator, if selected at power up, will de-select all other enunciators in order to prepare the Scout for in-the-pocket operation.

The serial data port uses CI-V protocol with a unique device address and a specific command set to enhance Scout operation. Any Scout mode change initializes a communications receiver for remote operation. Tune commands are sent as each new frequency is detected.

A high capacity (850 ma hour) NiCd battery pack is used to provide six plus hours of operation. Even 12VDC operation in a vehicle is possible using the appropriate adapter. Radio charge circuitry is built in and will charge the pack in less than one hour when connected to an appropriate source of power. An LED charge status indicator is provided to monitor rapid charge and trickle charge. An AC adapter charger is provided. The Scout's aluminum cabinet measures 3.7 inches high, 2.75 inches wide, and 1.2 inches in diameter, and has a black painted finish.

The Scout comes with an AC adapter charger, 3.5-inch disk with PC compatible utilities, and a comprehensive operators manual. The price for the Scout is \$449. The DB32 miniature VHF/UHF antenna is \$29. The CX12 TTL to RS-232C computer interface is \$89. A wide variety of accessories including frequency specific antennas, filters, and preselectors is available from Optoelectronics for use with the Scout.

The Scout model 25 is now available. For sales or technical information, call (305) 771-2050, FAX (305) 771-2052, or circle 101 on our Readers' Service.

ICOM Introduces Dual-Band Mobile

ICOM introduces the IC-2700H dual-band mobile featuring a detachable front panel. Mount the front panel on your vehicle's dashboard and store the main body in

another location such as the vehicle's trunk.* The IC-2700H also provides two sets of controls for convenient dual-band operation and safe operation while driving.

Full access to all of the IC-2700H's functions are available from the supplied DTMF microphone. Another operating convenience is the HM-90/A wireless microphone which controls the IC-2700H via infrared signals, allowing the transceiver to be controlled by a "back seat driver."

The VHF (144 to 148 MHz) and UHF (440 to 450 MHz) bands have their own main tuning dial, VFO/MHz an Memory/Call buttons as well as Volume/Squelch control. Independent control of each band provides you with safe mobile operation while driving. For further ease of operation and safety, the IC-2700H has four selectable back lighting levels for varying lighting conditions.

A memory function allows you to store 20 to 80 memory channels in each band, providing a total of 100 memories. Transmitted frequencies are automatically entered into "scratch pad" memories for easy recall. Each band has six scratch pads to store three duplex settings for repeater use, and three for simplex settings.

Optional features include a UT-66 voice synthesizer and UT-84 tone squelch unit which provides pocket beep, tone squelch and tone scan functions (can also be used as a subaudible tone encoder).

Additional features include simultaneous reception of two signals on the same band (V/V or U/U) and sub-band mute or busy beep while receiving on both bands at the same time. An auto repeater function displays the repeater settings automatically when operating within the repeater frequency range. The IC-2700H also has one-push action switches (no [FUNC] switch) to simplify and speed up function access, a SET mode to customize operation and built-in pager and code squelch functions. A time-out timer function prevents accidental continuous transmission when using the one-touch PTT function.

The suggested retail price is \$959 for the 50-watt IC-2700H (35W UHF). For further information, please contact your local Icom amateur radio dealer or ICOM America, Inc., 2380-116th Avenue, N.E., Bellevue, WA 98004, (206) 454-8155.

For more information, circle 102 on our Readers' Service.

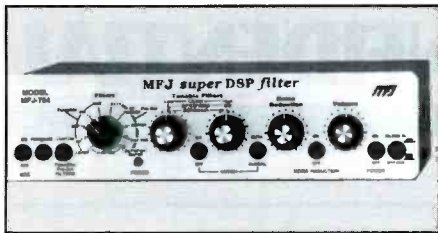
*Optional OPC-438 or OPC-439 required.

Super DSP Filter

The MFJ-784 Super DSP Filter has a tunable "brick wall" band pass, low pass, high pass, notch filters, and programmable preset filters.

There is an automatic multiple notch filter that eliminates heterodynes, as well as adaptive noise reduction, and QRN for





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You also get MFJ's automatic notch filter that searches out those multiple heterodynes and eliminates them. You receive MFJ's advanced adaptive noise reduction filter that silences background noise and QRN so well that SSB signals sound like a local FM repeater.

You can use the automatic notch filter and adaptive noise reduction in all tumble and preset filter modes. Plus, a push-button can quickly bypass your filter so you can hear the entire unfiltered signal and see if anyone is calling you.

MFJ-784 Super DSP Filter comes with a built-in 2 watt amplifier, volume control, input level control, speaker jack, earphone jack, accessory jack, PTT line, PTT sense, and line level output. The MFJ-784 measures 9 x 2 1/2 x 6 inches.

Use 12 VDC or 110 VAC with the MFJ-1215, for \$14.95. The MFJ-784 comes with MFJ's now famous "No Matter What" full one year guarantee.

For more information or to order, contact any MFJ dealer or MFJ Enterprises, Inc., P.O. Box 494, Mississippi State, MS 39762, or call (601) 323-5869, or FAX (601) 323-6551. Order toll-free at 1-800-647-1800. Also circle 103 on our Readers' Service for additional information.

ICOM Introduces IC-820H All-Mode Dual Band Transceiver

ICOM announces the IC-820H high performance all-mode dual band base station transceiver. The IC-820H is compact and light weight, making it ideal rig for mobile, fixed or field operation. The IC-820H is packed with top performance features unmatched by other base station transceivers including a newly designed DDS (Digital Direct Synthesizer) capable of resolving 1 Hz tuning steps for fine tuning.

Built-in satellite functions include normal and reverse tracking, independent up-

link/downlink control for Doppler shift compensation and separate satellite VFO. Ten satellite memories allow you to quickly switch from normal to satellite operation, plus easily recall satellite uplink and downlink frequencies.

Independent controls and indicators for each band make the IC-820H easy to operate. To change from the main band to the sub-band, simply push a button. You can even receive simultaneous signals on each band and monitor the signal strength of both signals on separate S-meters.

Tune automatically at variable tuning speeds by using the sub-tuning function and RIT or SHIFT control. This eliminates the need to rotate the main tuning dial frequently when trying to find a signal over a wide frequency range.

The IC-820H covers from 144 to 148 MHz VHF and 430 to 450 MHz UHF. Both bands have two VFO's.

Other features include IF shift that elec-

tronically adjusts the center frequency of the receiver pass-band for effective interference reduction and a noise blanker to eliminate pulse-type noise. A memory allocation function divides memories between bands. The IC-820H has an AF speech compressor, auto repeater and one-touch repeater functions, built-in high stability crystal unit, RIT, CW semi break-in and side tone.

Programmed scan, memory scan and mode select scan are included in the IC-820H. Packet operation (9600 bps) is possible with the modulation limiter circuit.

Options include a UT-50 tone squelch unit, UT-36 voice synthesizer and FL-T32 CW narrow filter.

The suggested retail price for the IC-820H is \$1,999. For further information, please contact your local ICOM amateur radio dealer or ICOM America, Inc., 2380-116th Avenue N.E., Bellevue, WA 98004, (206) 454-8155, or circle 104 on our Readers' Service.

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YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

Greg Gilbert, GA, sends a note outlining the results of his efforts to obtain info on the ERA Synoptic Translator for weather sent RTTY mode, in five letter groups. He indicated he had not received a response from the ERA company in the U.K. Fellow SWL'er Robert Hall, South Africa, wrote Greg stating he uses a program called TERM. Lastly, Greg advises he had learned Hoka Code 3 (option 8) is able to decode these weather transmissions. Hoka Code 3 is available from Computer Aided Technologies, P.O. Box 18292, Shreveport, LA 71138.

Duane Park, CA, writes: "Enclosed is a photo I had taken just after operating the Apollo 11 Special Event Station, KC4TCV, at Kennedy Space Center, FL. This event commemorated the 25th Anniversary of the Apollo 11 mission and man's first steps on the moon.

"The Station, one of 13, made nearly 4,000 contacts, on various Amateur Bands and modes during the 60 hours of operations. 1700 UTC July 19 through July 22, at 0500 UTC. This reflected the time Apollo entered lunar orbit through the time it departed, and returned to earth."


Richard Baker, OH, provided his usual informative rundown. This month: "Those who thought they had some great conditions hearing USCGC Resolute which had been homeported in Oregon, bad news. The cutter was on her way east to enter Service Life Extension Program (SLEP). She will be out of commission between one and one-and-a-half years at Curtis Bay, MS.

"Meanwhile, USCGC Alert has completed her SLEP, which took 19 months. The crew of the Resolute transferred over to the Alert. For the time being, Alert will be homeported at Astoria, OR.

"The USCG did commission USCGC Vindictor (WMEC-3) in May of 1994. She is the former USNS Vindictor (T-AGOS-3), a 224-foot ocean surveillance ship. She was quickly commissioned and sent out to assist in the Haiti/Cuban operations, but still needs further modifications.

"All three of the USGC WSES series hydrofoil cutters were decommissioned. Cost of operation was cited as the reason. The three, USCGC Petrel, USCGC Seahawk, and USCGC Shearwater, were based in the Florida Keys. To offset the loss, USSCGC Monhegan and USCGC Nantucket (both Island-class cutters) are now homeported at Key West."

Many thanks, Richard. The details you

VERIFICATION OF RECEPTION			
CATHAY 086			
Date	Time (UTC)	Frequency	Mode
MARCH 13-1994	12:55	2932	SSB
Aircraft Type	Approx. Xmsn Location	Aircrft Registr #	
B747-267F	ADNIP	VR-HIH	
Aircraft Home Base	AIRCRAFT WAS A B747-200 FREIGHTER ENROUTE FROM HONG KONG TO ANCHORAGE ON R 591 AIRWAYS POSITION WAS ADNIP (N38,15.1 E146,55.2) WITH STA ADGOR		
HONG KONG.			
Signature 	Official Stamp		CHIEF PILOT.

Steve McDonald, BC, Canada, said this returned PFC represented the reception of the 747 a/c contact when the a/c had been handed over from VHF to HF—400 miles northeast of Tokyo, Japan.

offer are always appreciated.


A news release from KFS World Communications in Half Moon Bay, CA, described improvements made in 1994 through the use of additional channels for marine communications. The company operates Palo Alto Radio (KFS) located near San Francisco, CA, and Slidell Radio (WNU) close to New Orleans, LA.

MNU activated ITU channel 1219 to provide improved coverage for ships traveling up and down the East Coast.

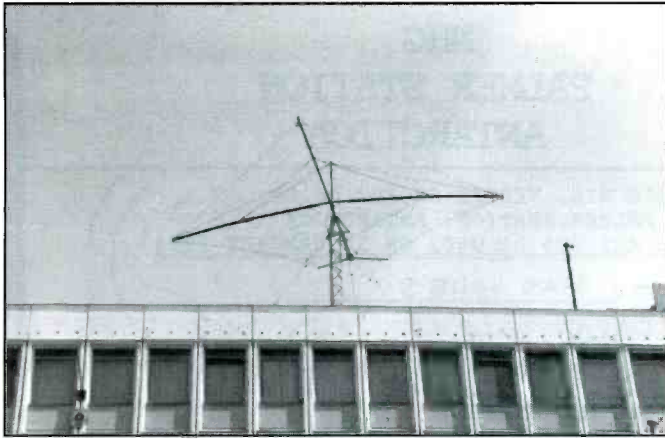
The 6 MHz service was improved by activating ITU channel 627.

In addition, for improved coverage in the Northern Gulf of Mexico, ITU channel 401 was part of the activation plan. KFS was also scheduled for activation of additional channels in the 8 and 12 MHz bands.

The Eighth Annual Winter SWL Festival will be held March 17 and 18, 1995, at the Holiday Inn, in Kulpville, PA. For you early arrivals, I have learned that the Hospitality Room will open during the afternoon on the 16th. I plan to attend and welcome the opportunity to talk UTE things with any readers who join me. Check various club publications as they will carry registration

 <p style="text-align: center; font-weight: bold;">MCAS EL TORO Santa Ana, California 92709</p>	<p style="text-align: center; font-weight: bold;">VERIFICATION OF RECEPTION</p> <p>Station <u>NNNØMET</u></p> <p>Location <u>MICAS EL TORO</u></p> <p>Date <u>18 March 92</u> Time <u>2309 UTC</u></p> <p>Frequency <u>20623.5</u> Mode <u>USO</u></p> <p>sign/stamp _____</p>
--	--

MARS QSL from the collection of Dave Sabo, S. Korea.



This photo from Kevin Tubbs, VT, shows the antenna on the roof of an unidentified Embassy in Berlin.



Peter Aoyama, KD6GKT (left) and Duane Park, WA6EIK (right) both attended the Ham event commemorating the 25th Anniversary of the Apollo 11 mission. (Notice their hands are full with their equipment and an issue of POP'COMM!)

information, or write to Winter SWL Festival, P.O. Box 591, Colmar, PA 18915, to request a registration packet.

Driftnet Buoy Signals

For at least a dozen years, countless driftnet buoy signals have been observed on unauthorized frequencies.

During the past couple of years, Al Underwood, NY, has reported details on this subject in the LOWDOWN, monthly bulletin of the Longwave Club of America.

One FCC branch has been granting licenses for buoy operation. Yet, in the past, another FCC branch has claimed they knew nothing about buoy signals nor any QRM problems caused by buoy transmissions.

The out-of-band buoy signals cause QRM to ham operators in the 160-meter band, and often obliterate the milli-watt signals of experimental propagation beacons (MEDFERS) in the 1600 to 1700 kHz band.

Here are some summarized remarks from one of Al's reports:

"The only legal band for American buoys is 1715 to 1750 kHz. If American buoys are operating within the Exclusive Economic Zone (EEZ) which is 200 miles of protected waters, they belong only in the legal band. If American buoys located beyond 200 miles are operating, they are illegal and in violation of two U.N. resolutions banning all high seas driftnet fishing. Foreign buoys are not allowed in the U.S. EEZ. Foreign buoys on the high seas are breaking the U.N. ban. So, with the exception of perhaps Mexico, St. Pierre, and a few of the Latin countries, any legal buoy has to be located within 200 miles of that country's coastline!"

Al pointed out that buoy loggings have been heard at 2100 UTC, late afternoon in the Eastern U.S., and well before dark. Buoys only run about 3 to 6 watts. Hearing buoys located within 200 miles of Africa

or Europe at that time of day isn't likely. Al suggested as a check, to listen for PCH on 1620 kHz or LGB/TLX on 1646 kHz, running a couple of kW, and it would be rare to hear them before dark.

"U.S. listeners in the South and West might hear buoys off the coast of Mexico or Latin America. Listeners in the Northeast may hear buoys near St. Pierre, and I have heard the French are ignoring the ban on fishing in the outer banks, passed by the Canadian government. But, for the 99 percent of the buoy signals being heard—just plain illegal!"

Buoy signals have been observed from 1600 to 2000 kHz and can be recognized from these general operating characteristics: Most buoys send three repetitions of the call sign followed by a dash, and then a silent period of four minutes. This procedure is continuously repeated throughout the 5000-hour life of the battery. Call signs normally have a maximum of six characters. At 3 to 4 watts output,

the estimated transmission range over salt water is about 150 miles.

I have learned that the U.S. Navy, working with the Commerce Department's National Marine Fisheries Service, has utilized the Navy's Integrated Undersea Sound Surveillance System to detect and track illegal driftnet fishing boats trolling in the U.S. and International waters.

However, there will probably not be any long term effort mounted because the Navy has indicated to Congress that as one of its cost-saving measures, most of the Sound Surveillance arrays will be placed in a stand-by status. The government giveth and the government taketh away!

To close this discussion, I wonder how many U.S. Senators and House members are Radio Amateurs, and if any of them are aware that illegal driftnet buoy signals affect legitimate ham and MEDFER transmissions? I hope those legislators could jointly discontinue the FCC's improper licensing of buoys, see that these devices



USCG CUTTER SWEETGUM

To: Amateur Radio AA4JN

This confirms reception of USCG radio transmissions

Call sign: NR0W Date: 15 JUN 93 Time: 2330Z Mode: USB

Freq: 5.320kHz Hull #: WLB309 Home Port: MOBILE ALA

Cutter Class/Specs: 180 Ft Balsam Class Buoy Tender

Approx Location: SOUTH WEST PASS LA

Remarks: Thank you for your interest in USCG communications. ENS K. D. ... Comms
signature/title

PFC returned to Jim Navary, VA.

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/led/location
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

are discontinued, and those who continue to operate out-of-band would be fined.

Before we look at the other loggings for this month, I have grouped those from Richard Baker, OH, which related to the attempted launch of STS-68, shuttle Endeavor. All comms were in USB.

2764: At 1005. Booster Recovery Director (BRD) w/kg M/V Liberty Stat, WRPH, advises "contact B" is a naval support vessel for launch.

2836: USCGC Vigilant (EWMEC-617). NHIC, w/kg Cape Radio at 0653 w/comms cks after QST fm 4520 kHz.

3120: USCGC Vigilant w/kg DoD Cape at 0508 w/position. QRM from Link-11 system, QSY 4520 kHz.

3187: M/V Liberty Star w/rdo ck's at 0746 w/BRD. At 0747 Booster recovery ship M/V Freedom Star. KRFB. w/same.

4704: USS Philippine Sea (CG-58), NPSE, and USCGC Vigilant w/kg DoD Cape/Cape Radio w/comms cks after QSY fm 2836 kHz. KING 1, fixed wing rescue a/c. w/kg DoD Cape at 0949 advising airborne 0941 w/ETA to orbit area at 1031 UTC. KING 2 reports "on ramp" & availability of KING 3.

5190: Booster recovery ships M/V Liberty Star and M/V Freedom Star w/rdo ck's at 1037 w/BRD after QSY fm 2764 kHz.

Our thanks to Richard for these launch activity frequencies.

UTE Loggings. All Times in UTC.

212: Beacon BCC, Bear Creek (Tanana), AK at 0642. (GB)

214: Beacon DA, Dawson, Y.T., Canada at 0643. (GB)

248: Beacon QH, Watson Lake, Y.T., Canada at 0640. (GB)

253: Beacon UR, Burbank-Glendale-Pasadena, CA at 0509. (BV)

254: Beacon EV, Inuvik, NWT, Canada at 0638. (GB)

257: Beacon FFF, Plymouth, MA at 1712. (AH)

260: Beacon ESG, Rollinsford, NH at 0944; Beacon YAT, Attawapiskat, Ont., Canada at 0848. (AH); Beacon YSQ, Atlin, BC, Canada at 0633. (GB)

263: Beacon QY, Sydney, NS, Canada at 0143. (AH)

270: Beacon TOF, Beverly, MA at 1632. (AH)


278: Beacon OS, Los Angeles Int'l, CA at 0324. (BV)

281: Beacon CA, Cartwright Field, Nfld., Canada at 0215. (AH)

282: Beacon GWF, Lancaster Fox Field, CA at 0325. (BV)

301: Beacon BI, Block Island, RI at 1653. (AH)

302: Beacon L, Point Loma Light Stn nr San Diego. CA at 031. (BV)



NHG
PALMER STATION
ANTARCTICA

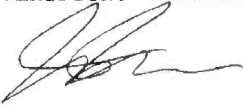
THIS WILL VERIFY RECEPTION OF:
PALMER STATION, ANTARCTICA
ON 11553.0 KHZ USB AT 0602 ON 13 JANUARY 1993

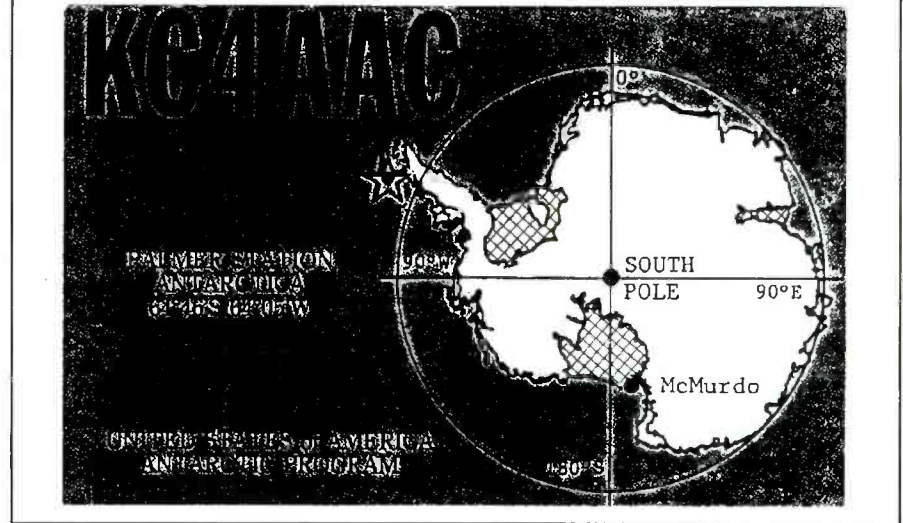
TRANSMITTER/POWER: 1000 WATS

ANTENNA: TRI BAND

LOCATION: PALMER STATION AY

VERIFYING OFFICIAL AND STAMP:





With the return of his PFC, Richard Baker, OH, received the KC4AAC QSL card.

304: Beacon WWW, u/i at 0207. Three W's very slow then a dash. (AH)

328: Beacon CH, Charleston, SC at 0909. (AH)

332: Beacon QT, Thunder Bay, Ont., Canada at 0913. (AH)

335: Beacon HP, Heath Point, PQ, Canada at 0201. (AH)

344: Beacon FCH, Fresno Chandler Municipal, CA at 0334. (BV); Beacon CL, Cleveland, OH at 0858. (AH)

351: Beacon DY, u/i. Dash after id. (GB)

356: Beacon AR, Providence (Green airport), RI at 1717; Beacon AY, St. Anthony, Nfld., Canada at 0306. (AH)

359: Beacon EMT, El Monte, CA at 0355. (BV)

362: Beacon FMH, Falmouth, MA at 0854; Beacon SB, Sudbury, Ont., Canada at 0148; Beacon SC, Sherbrooke, PQ, Canada at 0259. (AH)

364: Lake Havasu City, AZ. Lake Havasu airport w/automatic wx every min. Am at 2030. (BS)

365: Beacon MA (DAID), Mayo, Y.T., Canada at 0629; TWEB SHH, Shishmaref, AK. (GB)

370: Beacon PAI, Pacoima Barton Heliport, CA at 0336. (BV)

375: Beacon BO, Boston, MA at 0821. (AH)

378: Beacon CPM, Compton, CA at 0337. (BV)

386: Beacon Am, Tampa, FL at 0936. (AH)

396: Beacon JC, Rigolet, Nfld., Canada at 0218; Beacon PH, Martinsville, VA at 0810. (AH)

397: Beacon LLJ, new an unknown id. Moderate sign at 0339. (BV)

398: Beacon SRI, u/i, not listed in Beacon Guide. (GB)

400: Beacon AK, King Salmon, AK at 0952. (GB); Beacon FO, Westhampton, NY at 0855. (AH)

403: Beacon AMF, (TWEB), Ambler, AK at 1000. (GB)

404: Beacon GCR, Cordova, AK at 1000. (GB)

407: RTTY signal, slow baud rate. Hrd at 0344. (BV)

412: Beacon FXW, Farewell Lake, AK at 1001. (GB)

414: Beacon IME, Sitka, AK at 1002. (GB)

426: Beacon IZS, Montezuma, GA at 0919. (AH)

519: Beacon EAA, Eagle, Ak at 1003. (GB)

524: Beacon MNL, Valdez, AK at 1004. (GB)

2182: NCF, USCG Group Miami in USB at 0148

wkg vs! Migan Miguel (?) re unk distress. Vsl reports can see several red lights. Vsl opr speaking accented SS so unknown if these were flares that were sighted. NCF later had a SS speaking person take over comms. (RB)

3550: YMA20, Ankara, Turkey Meteo w/RYS in Baudot 50. Hrd at 2132. (AB)

4071: Great Lakes bulk carrier/self-unloader Str.

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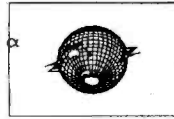
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07 May 1993

ROYAL AUSTRALIAN NAVAL COMMUNICATIONS STATION

TO: Hiroshi Saito
JAPAN

Dear Hiroshi,

Thank you for your reception report dated 11 October 1992.

I am pleased to reply to your letter. You are one of many listeners who we hear from throughout the year and I hope the following information is of use to you.

Our station does not have a set QSL card or station stamp to verify your report but this letter will be confirmation of your report.

Please find enclosed a brochure on HMAS HARMAN, which I hope will be of interest to you.

Best Regards,

RON TANNER
Chief Petty Officer
Radio Supervisor

QSL letter received by Hiroshi Saito, Japan.

JKCL (Boeing 747-300 JA8179 at 1517 and SF wrkd Japan Airlines 2 (Tokyo-San Fran) for position at 1555. (MH)

6779: DRAV, German Navy frigate FGS Karlsruhe (F-212) at 0046 wkg DHJ59, Wilhemshaven Naval in USB voice after conclusion of RTTY run. At 0420, DRDO, German Navy attack sub, FGS U-21 (S-170) wkg DHJ59 in EE/GG voice foll by RTTY. (RB)

7375: YL/GG w/1-0 count and 999 announcement from 2100-2110. After ten tones 'Gruppe 71' and into 3/2F grps. (SM)

7535: USN Norfolk SESEF w/ships testing equipment: AT 1426 USS Detroit (AOE-4), NDWQ, tests ANDVT (system for "green comms). At 1454, USS Vella Gulf (CG-72), NVLA, w/cks of two URT-23's (HF xmtrs). 2-UHF xmtrs. At 1555, USS Nashville (LPD-13), NDVW, "tech control" w/HF xmtr tests. At 1702, USS Flatley (FFG-21), NFJH, wkg SESEF Norfolks for proper freq to raise SESEF Charleston. Norfolk advised 4515 kHz USB. At Giant Killer, US Navy FACSFC (Fleet Area Control & Surveillance Facility) for the Virginia Capes ops area (VACAPES) w/SESEF w/request they go green. Then into secure comms. At 1817, USS Haylor (DD-997), NRWH, ("Second to None") w/tests of Link-11 system. At 1818, NNLG, USNS Leroy Grumman (T-AO-195) w/HF rdo cks. Primary mode was USB. (RB)

7760: RGH77, Arkhangelsk Meteo at 2150 w/meteo synops in RTTY, Baudot 50 bands. (AB)

8140: BMB, Taipei. Taiwan at 1115 w/FAX wx. (EW)

8143: U/i '177' +5F grps in Czech at 0800 in USB. (AB)

8165: KUL, u/i (Poss Russian Dip) in RTTY. 75

baud, at 0730 w/KUL 1/369 & into 5L grps. (AB) 1/369 means one mssg of 369 grps. (Ed.)

8204: KMI, Dixon, CA being called by u/i Maritime stn. Hrd at 0410 in USB. (GB)

8237: Aircraft N185G, at 2045 in USB w/conclusion of R/T t/c w/WOM, Pennsco, FL. Although advertised as a system for Maritime & aviation by AT&T, it's rare to hear an a/c on these freqs. (RB)

8388: NOAAS Ferrells (S-492), 2250 w/ARQ CASREP on winch failure. (RB)

8402.5: U/i Brazilian Navy ship. PWNM (not listed in ITU) at 0145 in RTTY 75/850 w/Ry's to PWZ33. Brazilian Navy sta at Rio de Janeiro. (RB)

8412: TH Komsomolets Mariupolya, using old callign of UIES. At 0233 in 50/170 w/Ry's to USU & into TG's. Ship uses abbrev name of KSM Mariupola in TG's. (RB)

8643.5: UFB, Odessa, Russia at 1927 w/RTTY mssgs in RR, 50/170. (EW)

8825: New York ATC wrkng KLM 714 (Panamaribo-Amsterdam) w/position at 2307; Iberia 6600 w/position & oceanic clearance to Madris at 2330; Avianca 018 w/oceanic clearance at 2341; Lufthansa 549 (San Juan-Frankfurt) w/position at 2324; Air France 583 (Pointe-au-Pitre-Paris) w/Selcal FLDK (Boeing 747-300 F-GETB) w/position at 0103. (MH)

8828: Volmet, Honolulu ATC. w/wx for Canada and US West coast locations. USB at 0525. (GB)

8891: Cambridge Bay/Montreal ATC wrkng foll flights: Air New Zealand 2 w/position at 0349; Japan Airlines 629 w/Selcal DHKL (Boeing 747 freighter JA8144) at 2130; Nippon Cargo 082 w/position at 2130. (MH)

8906: New York ATC w/American 34 (Raleigh

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Emission - 100HA1A
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Antenna - Omni-Directional
Callsign - VHP (Naval Periods)
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Transmission site - Belconnen A.C.T., Australia

DARWIN CW BROADCAST - DETAILS OF TRANSMISSION

Hours of Operation - Continuous
Frequencies - 4316, 6393, 8512, 12750 continuous
17084, 22589 on-request
Emission - 100HA1A
Transmitter - AT510, 10kw output
Antenna - Omni-Directional
Callsign - VHI
Transmission site - Humpty Doo N.T. Australia

These transmission charts accompanied the QSL letter sent to Hiroshi.

Durham-Paris) on ground at Raleigh Durham requesting Selcal check FMHK (767 N325AA). (MH)

8993: A/c in USB clg McDill sev times but no joy. A/c used callsign of KO72. Though it might be Carter Delegation a/c since CNN had given tail number as 86972. Transmissions occurred at 0047 which was shortly after Carter take-off fm Port-au-prince. Checked other AF freqs along with NY Oceanic freqs but did not hear a/c again. (GH)

9027: CFH, Halifax Military at 2221 in USB w/Rescue 305 for rdo ck. 305 weak but readable. CFH advises maintain 9027 kHz as primary, 6693 kHz as secondary. (RB)

9040: YL/GG rptng Oscar Alpha from 1700-1705. Then 5F grps for 039. (SM)

9045: 5YE, Nairobi, Kenya Meteo at 2125 w/FUKN HKNC charts in FAX, 120/576. (EW)

9060: RCR74. Khabarovsk, Russia at 1145 w/wx in RTTY 50/850. (EW)

9250.7: FJY. Fort de France, Martinique at 1007 w/nx in FF in ARQ-E3 96/425. (EW)

9278: At 1850-1855 OM/RR w/254 then 810 810 2. 2. 11111 x2 22988 x2. 00000 and off. Mssg was two grps long. (SM)

9318: NRK, US Navy Keflavik at 0725 w/satel-

lite pix in FAX 120/756. (AB)

9926.7: ARQ mssgs in Indonesian fm Jakarta, Indonesia at 0728. (EW)

10117: BAF4. Beijing Meteo at 1929 w/FAX 120/576. ASXX & tropical cyclone warnings. (AB)

10270: RYM, IAG Moscow at 0940 in USB w/scientific mssgs in RR. (AB)

10412: RFFXL. French forces Naqoura at 2047 in ARQ-E. 72 baud, idling. (AB)

10493: WGY906, FEMA District 6 Hq, Denton, TX wkg WGY911, FEMA Hq Wash DC at 1815 w/SHARES tfc in USB, passing Date/time group mssg At 1925 WWJ921, no joy, then "any FEMA sta" re SHARES tfc. (RB)

10686: 9DM17. Teheran, Iran at 1250 in RTTY. 50/850 w/wx. (EW)

11053: Air Force 1 wkg Andrews at 2021 w/pp to CROWN after comms cks in "F354" in USB. (RB)

11176: NOAA 43 (WC-130 "Hurricane Hunter") at 2034 in USB wkg Ascension GHFS for pp. (RB)

STINT 49 w/Croughton. PP to PLANTATION. "PLANTANTION PLANTATION. STINT 49 WAS CHARGER AT TIME 0105. REQUEST AUTOFOX."

Hrd at Ascension answers. Hrd 2315 in USB. (AB)

11467: SNN299, Warsaw, Poland in RTTY.

75/200, w/news in Polish. (EW)

11545: YL rptng "Sierra Bravo" from 2230-2235 w/electronic tones. At 2235 YL/GG w/5F grps for 174. Another day at 1400 YL/EE w/"Mike Delta" and mssg for 241. (SM)

12090: RFTJ, French Forces Dakar. Senegal at 2131 in ARQ-E3, 192 baud. Control de Voie. (AB)

12225.3: HDN, Quito Naval Radio, Ecuador at 0141 in RTTY, 75/850, w/"Oceanic IX" exercise t/c. Other stns addressed were LOL, Argentine Navy, Buenos Aires; CXR, Montevideo Naval, Uruguay; CCS, Santiago Naval, Chile; OBC, Callao Naval, Peru; and u/i garbled callsign. (RB)

12314: U/i fishing boat in USB at 0018, in Alaskan waters, talking about crab pots. (GB)

12479.5: 3ESP2, M/T Adelia. Panamanian LPG tanker at 2118 w/telex re sailed Philadelphia. At 2124, C6MD9, M/V Santiago Star, w/AMVER via KPH, San Francisco, CA. Both in ARQ mode. (RB)

12485.5: WTEA, NOAA's Discoverer (R-102) w/ARQ "noon report" at 2327. (RB)

12573: UVEZ, TH Leonad Gal'chenko, factory fishing trawler, in RTTY, 50/170, w/TG's at 2102 to Murmansk using hull id of MA-1821. (RB)

12581.5: EDJ5, Madrid, Spain in FEC w/t/c list at 2108. (RB)

12615: USU, Mariopol Radio at 0015 wkg UNDX. TH Gleb Krzhizhano w/ARQ TG's. Ships old callsign was UBQN & 93 ITU supplement shows it changed to UZWL! (RB)

12601.5: UFL, Vladivostok, Russia in RTTY, 50/170, at 0805 w/wx in RR. (EW)

12844.5: GYA, London, England at 0754 in FAX w/wx maps. (EW)

13054: At 2000 unknown CW marker sending VVV DE UTQ7. Any ideas? (SM) This callsign poss allocated to Estonia. (Ed.)

13131: NKVQ, USCGC Nantucket (WPB-1316), wkg NMG, CommSta New Orleans for simplex pp in USB. Was for CNN reporter on board to do live voice over report re Cuban refugees. Nantucket featured for several says on CNN. (RB)

13221: GONZO 04D wkg PIPELINE at 2040 in USB to advise is in VHF range of Winnipeg & is clearing the net. Foll by GONZO flights believed be Can-Forces training flights out of CCFB, Winnipeg. (RB)

13282: Honolulu Volmet in USB at 0359 w/wx for N. Pacific locations. (GB)

13300: Air Mike. Air Micronesia in USB at 0022 clg Honolulu ATC. (GB) Airline is Continental Micronesia, Inc., based at Tamuning, Guam. (Ed.)

13890: YL rptng 'Juliet Whiskey' from 2100-2105 foll by 5F GG mssgs for 521 and 824. (SM)

13891: OM/RR rptng 169 169 169, 000 between 2000-2005. (SM)

14441.5: NAVMARCORMARS. NNN0CXH, USS Connolly (DD-979) at 2107 wkg NNN0NIM. First three ships were in calling mode. All in USB for pp t/c. (RB)

14470.7: NNN0ASC, MARS, Camp Foster, USA in ARQ at 0735 w/mssg to NNN0NZZ. USS Kittyhawk. (EW)

14630: At 1340 CW stn sending 121 121 121, 00000 and off at 1345. (SM)

14980: U/i stn w/RTTY bcst. 75 baud. to RAU foll by series of 6464's and QRU. Hrd at 1410.(AB) This looks like other callups seen for RR Dipl t/c. (ed.)

16270: OMZ, MFA Prague at 2035 w/RTTY mssg, 75 bauds. (AB)

16800: UWUA, TH Novozybkov in RTTY, 50/170 at 2034 w/t/c fm URAE, TH Ol'ga Ul' Yanova. (RB)

16840: GKQ6, Portishead, England at 2326 in ARQ phasing w/CW id. (RB)

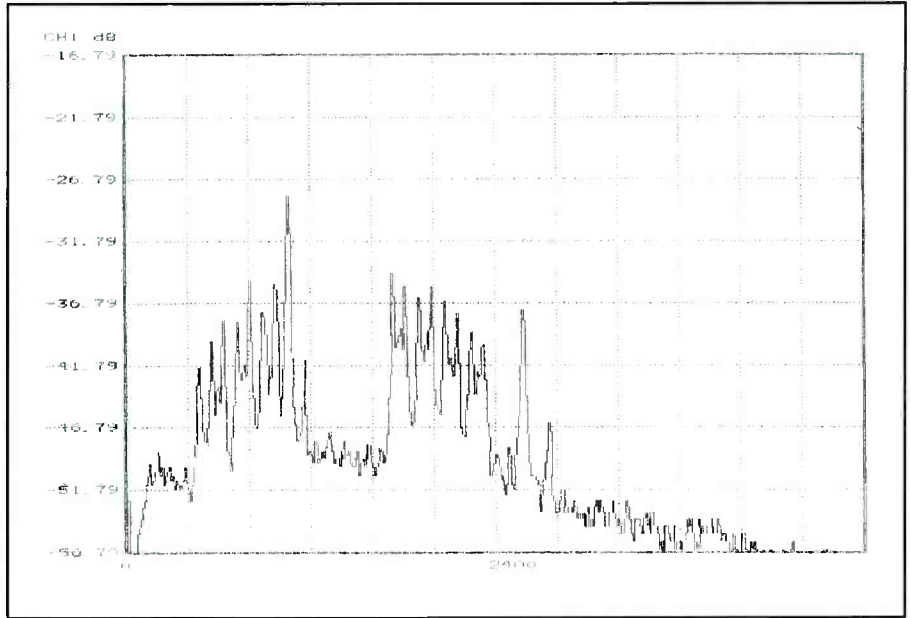
17536.7: Prawn fisherman off coast of Karuma, Queensland in ARQ at 0755. (EW)

18040: TCY4, Istanbul, Turkey at 1052 in RTTY, 50/425, w/nx in FF. (EW)

18195: YL/GG rptng 'Hotel Kilo' from 1600-1605. Very weak sig—unable make out addressee (agent number). (SM)

20350: YL/GG rptng 'Charlie Delta' from 1100-1105 after which 5F grps sent for 162 and 432. (SM)

22379.5: CBV, Valparaiso, Chile at 1915 wkg vsl w/selcals in ARQ & telex t/c. Sent 3 telexes, 1 w/5F grps! Note Klingenfuss shows 22381.5 kHz in the 11th edition and Ferrell shows 22380.5 kHz in its 8th edi-



This signal analysis chart by Kevin Tubbs, VT, shows a VFT stack in USB on 8460 kHz where the channels are spaced 170Hz apart with 75 Hz channels keying 75 bps.

tion. Also, Sitor id was "CBV VAL" as in Valparaiso rather than Playa Ancha Radio. (RB)

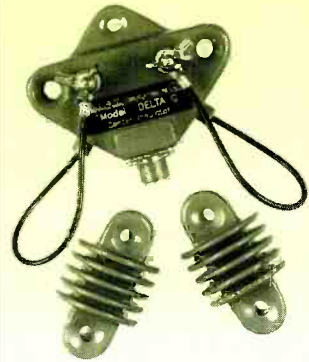
ada; Simon Mason, England; Ary Boender, Netherlands; Gerald Brookman, AK; Basil Shelley, CA; Bjorn Vaage, CA; Richard Baker, OH; Al Hemmalin, RI, and Garie Halstead, WV. ■

Contributors this month: E.L. Waters, Australia; Mark Heywood, Alberta, Can-

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HOW I GOT STARTED

Popular Communications invites readers to submit, in approximately 150 words (more or less), how they got started in the communications hobby. They should preferably be typewritten, or otherwise easily readable. If possible, a photo of the submitter should be included.

Each month we will select one entry and run it here. You need submit your entry only once, we'll keep it on file. All submissions become the property of Popular Communications, and none can be acknowledged or returned. Entries will be selected for use taking into consideration if the story they relate is especially interesting, unusual, or even humorous. We reserve the right to edit all material for length and grammar, and to improve style.

The person whose entry is selected will receive a one-year gift subscription (or one-year subscription extension) to Popular Communications.

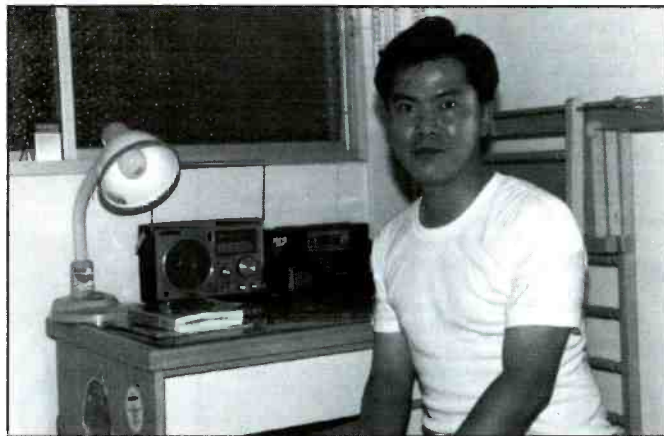
Address all entries to: How I Got Started, Popular Communications, 76 North Broadway, Hicksville, NY 11801.

Our February Winner

This month Ron-Hau Din, from Keelung, Taiwan, tells us how cupid's arrow has sparked his love for the shortwave listening hobby:

"In 1971 when I was ten, my grandmother gave me a portable transistor-type AM radio which started to bring the wonder of communication into my life. Whenever I turned on this radio, sweet music flowed from this pocket-sized magic box. Attracted by this interesting technology, I chose electronics as my major when I entered the vocational school in 1977. At that time, I started to listen to the shortwave broadcasts from the world outside Taiwan.

"After my graduation, I served in the Chinese Air Force and was given the responsibilities of navigation and communication



Ron-Hau Din, broadens his shortwave listening horizons as he catches broadcasts from Taiwan, and other countries all around the world.

equipment maintenance. During this period, I bought a NATIONAL R-442B SW/AM radio, which brings me closer to SW broadcasts. The first station I received through it was VOA. Maybe the reason was that VOA stations broadcasts have stronger power, and can be received more clearly than the others.

"Now I'm 34, I have better economic ability for better quality equipment, and I have collected 24 different QSL cards from all over the world (including BBC, NHK, DW, etc). Listening to international SW broadcasts after working all day is always time well spent for me."



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HANDI-CHAT

BY TED LISLE, KD4EXK

FOR THE HANDICAPABLE COMMUNICATIONS HOBBYIST

Hello again! Welcome! It's a new year with lots to cover, so let's get started!

This month's first letter comes from Margaret Smith, of Gross Point, Michigan. Styling herself an "Avid reader" of Handi-Chat, Margaret is a novice SWL who enjoys her Kenwood R5000, but feels her appreciation and understanding of the hobby would be enhanced by a few explanations of basic shortwave terms and concepts. First, she is curious if there are any primers on shortwave available through the Talkingbook Program. A telephone call to the Local Talkingbook Library unearthed several braille (BRA) and cassette (RC) titles on amateur radio, some of which may contain helpful information. They include the *ARRL Novice Question and Answer Book* (BRA16746), *Basic Book of Ham Radio* (BRA17491/RC16723), *Complete Guide to American Ham Radio* (RC16725), and the *Radio Amateur's Handbook* (RC16588). As for the availability of an R5000 operator's manual, that is a different matter. My best suggestion would be to find a local or state-wide volunteer organization willing to transcribe or record your printcopy.

She further states, "I am also puzzled by single sideband (SSB and USB)." Basically, most standard AM (and FM, but that's another story) signals consist of a carrier and two sidebands, one of which extends below the center frequency, the other above it. The term band width refers to the total area above and below center frequency. With only a few exceptions, most international shortwave signals use double-sideband, full carrier. However, most hams, and many utilities—weather, aviation, river, marine, etc.—use only one sideband, with the carrier suppressed. This carrier suppression makes SSB speech unintelligible in normal AM mode. While listening to some shortwave (or even distant mediumwave) broadcasts, you have probably noticed occasions when the speech or music became heavily garbled. This was due to the carrier dropping out, while the modulation remained. Similarly, the "flutter" effect sometimes present on distant shortwave signals results from the sidebands arriving at your antenna a fraction of a second apart.

Other queries pertain to what can be heard on the bands. The sound of an "airplane revving up" is probably a LORAN (long-range navigation) device, used by pilots to ascertain their position. She also wants to know why hams and international broadcasters share spectrum and who makes the allocation decisions. The only ham band shared by hams and international broadcasters is 40 meters (7 to 7.3 MHz). International allocation decisions about which service—amateur, international

broadcasting, utility—goes where, are made by the International Telegraphic Union (ITU), a UN agency. The 40-meter conflict arises from the fact that allocations are not universal across the three ITU regions.

Finally, "Why do some stations occupy more than one frequency at a time, or change frequencies?" As you may have gathered from the listings appearing monthly in this magazine, most of the major international broadcasters attempt to cover multiple target areas, using multiple languages, 24 hours per day. Broadcasters change frequencies over the course of a day due to fluctuations in propagation. Adjusting for seasonal differences, and depending upon where we happen to be in the solar cycle, the higher bands are generally at their best when the target area is in daylight. A basic understanding of the link between propagation and ionization is fundamental to the full enjoyment of shortwave, and a glance through back issues of *Popular Communications*, *QST*, or any other good radio magazine will yield a rich harvest of solid articles on the subject. Thanks for contributing, Margaret, and welcome to a stimulating, fascinating hobby.

John J. Penny, of Tulsa, Oklahoma, wants to know if hams are exempt from that portion of the Electronic Communications Privacy Act, forbidding civilian monitoring of cellular frequencies. John, you are probably thinking of the various local and state ordinances restricting use of mobile scanners. Because amateur radio is a federally licensed service in which licensees frequently engage in public service activity, the American Radio Relay League has worked to win exemptions for those amateur transceivers which also receive public service frequencies. Actually, very few ham radios have ever come equipped for reception of cellular frequencies. The only model of which I am aware is the Icom 2SRA. This unit is a two-meter transceiver with a difference, in that its receive capability extends from 50 MHz to 900 MHz. Current production models have all cellular frequencies electronically blocked, but older versions can almost certainly be had on the used market.

Our last two letters are hardware related. Tari Livingston-Hughes teaches English at John F. Kennedy High School, Granada Hills, California. A communications enthusiast since childhood, her interests include TV, standard AM and FM broadcasting, international shortwave, and CB. She also uses radio in her classroom, and would like to earn an amateur radio license. Currently, she's in the market for a hassle-free 11-meter handheld, which will allow her to easily ascertain what channel she is on, especially upon initial turn-on. Apparently, her old reliable rig had a rotary chan-

nel selector with "an angled flat surface on one side of the knob." Thus far, however, her search for a replacement has yielded only featureless round channel selectors.

Well, Tari, you might want to check out the GE "emergency radios." I purchased one several years ago, and, although channel selection is accomplished via the use of up/down push buttons, there is a "priority nine" feature, and—best of all—the rig defaults to Channel 1 upon power-up. For product information, check local dealers, or contact GE at (800) 626-2000.

Good luck. I'd like to hear more about how you integrate radio into your classroom activities, and I'll bet others would too.

Finally, Robert D. Feinberg of Niles, Illinois, presents a similar dilemma. From 1957 to 1975, he was active on 20 through 10 meters as K9CIA. Apparently, he had the presence of mind to retain his license, and wants to get back on the air, preferably on 2 meters, but doesn't know where to begin. His last rig was a Hallicrafters SR2000. He writes, "I am unfamiliar with today's equipment, particularly any equipment suited for the visually-impaired."

As stated last August, direct frequency entry and synthesized speech are common features of modern equipment. In beginning your search, you might contact The Courage Handi-Hams of Golden Valley, Minnesota (see the June column for the address) for their recommendations. The feedback of ham friends is often invaluable. Catalogs, while an obvious problem for those of us who are visually impaired, are good barometers of market trends and current prices. Finally, don't overlook hamfests and (my particular favorite) traders' nets as sources for new and/or gently used ham gear. While nearby hamfests may only occur a few times a year, nets air several times per week, usually on 75 meters or 2 meters. One of the nation's finest swapnets, accessible to anyone with a decent shortwave portable, meets every Tuesday and Saturday from approximately 0000 to 0200 UTC (read Monday and Friday local time) on 3.898 MHz, LSB. Many, if not most, of the participants are regulars, and sharks are decidedly unwelcome, meaning that the prospective buyer can shop with confidence. I have acquired two rigs from locals through this particular net, and find it a great way to window shop. Happy hunting, Robert, and welcome back.

Well, that's it for now. Again, thanks to this month's correspondents. Special thanks also to my Dad, David Lisle; to longtime friend and veteran SWL Jim Shaw (KD4SDX); and to Maxine Surratt, of the Louisville Talkingbook Library, for their help in dotting some of the I's and crossing some of the T's. Till next time, take care, and write if you get work. ■

WASHINGTON PULSE

FCC ACTIONS AFFECTING COMMUNICATIONS

Ordered to Forfeit \$400 for Operating an Unlicensed Coast Station

The FCC ordered Seawest Yacht Brokers, dba San Juan Marina, to forfeit \$400 for willful violation of the Communications Act by operating an unlicensed radio station on Marine channel 68.

Alan S. Trunnell, General Manager of San Juan Marina, admitted to unlicensed usage and requested remission of the initial forfeiture in the amount of \$8,000. Trunnell stated that he had attempted to register with the Commission, but the initial cost of the license was prohibitive, thus preventing him from completing the licensing process. He argued that no subsequent violations had occurred, and that he intended to apply for a license once the company was financially able to do so. Trunnell further argued that his business is the only one capable of serving vessels in need and it, therefore, provides an important service.

The Commission stated that the violation was willful (i.e., that he operated an unlicensed station) as defined under the Communications Act. Although Trunnell claimed that his company was unable to afford the initial fee for licensing, the Commission noted that this does not change the nature of this violation.

The Commission acknowledged that subsequent to the violation, Trunnell and his staff have made efforts to comply with FCC regulations. The Commission noted, however, that subsequent adherence to Commission rules is expected and does not nullify or mitigate liability.

FCC Announces Changes in FCC Watch Officer Outage Reporting FAX Numbers

Please be aware that the FAX numbers for the FCC Watch Officer in Washington, D.C. are changed. Outlined below are the changes:

Main Outage FAX Number:

OLD: (202) 634-1550
NEW: (202) 418-2812

Back-up Outage FAX Number:

OLD: (202) 653-5402
NEW: (202) 418-2813

Please verify that your FAX has been received by calling the Watch Officer. The voice telephone number will not change at this time. The FCC Watch Officer may still be reached at (202) 632-6975. The Grand Island, Nebraska FAX and voice telephone also will not change at this time.

Supporting Use of 900 MHz Frequency for AVI

Intellitag Products has joined nine other electronic toll and traffic management (ETTM) manufacturers in support of continued use of the 902 to 928 MHz frequency band for automatic vehicle identification (AVI). The statement of support was made to the Federal Communications on October 3, in a letter addressed to FCC Chairman Reed Hundt, and signed by Richard A. Orr, General Manager of Intellitag Products, and representatives of the other ETTM industry leaders. The ten companies manufacture and supply virtually all of the operational AVI systems in North America.

The recommendation for continued use of the AVI frequency was based on technical performance, product cost, and FCC regulatory considerations. The FCC has been considering such a ruling for more than a year in Docket 93-61. The letter recommends the FCC finalize the process for reserving this frequency.

"There are hundreds of thousands of drivers already using equipment that operated in this band for electronic toll collection and traffic monitoring, and there are plans to equip millions more," Orr said. "By making this united statement, the FCC will get a clear message that the suppliers of AVI technology firmly support the continued use of the 902 to 928 MHz band."

Deliberations by the FCC on band use for AVI have caused speculation and considerable confusion by users of AVI products. Some toll agencies have even released purchase specifications requesting operating frequencies not allowed for licensed operation by the FCC. ETTM manufacturers made the statement of support because of concern that specification of frequencies outside the bands allowed by the FCC may cause significant contractual and regulatory challenges. Ultimately, this will delay implementation of AVI systems as well as reduce performance and increase the cost to consumers.

The letter, also signed by representatives from Amtech Corporation, AT/Comm, Delco Electronics Corporation, Hughes Transportation Management Systems, Lockheed IMS, Mark IV Industries, Ltd., MFS Network Technologies, Motorola, Inc., and Texas Instruments, urges the FCC to rule immediately.

"The united recommend to use the 902 to 928 MHz band is an unprecedented display of agreement among the AVI equipment providers, and should remove any confusion our customers have for what operating frequencies their equipment should use," Orr said. "The 902 to 928 MHz band is the right band for AVI."

For a copy of the letter submitted to the

FCC, contact Bridget Stevens, director of account services for MCCcommunications, at (214) 480-8383.

Propose Additional Rules for Licensing SMR Systems in the 800 MHz Band

The FCC is seeking comments regarding the accommodation of wide-area Specialized Mobile Radio (SMR) systems in the 800 MHz band. This action would amend Part 90 of the Commission's rules to provide a new licensing mechanism that will facilitate transition to contemporary 800 MHz SMR technologies and services.

The Commission stated that the rules proposed are a direct outgrowth of its recently adopted Third Report and Order in GN Docket No. 93-252, in which the Commission concluded that its SMR rules should be comparable to its rules governing competing commercial mobile radio service (CMRS) providers. The Commission stated further that the rules now proposed are intended to strike a fair equitable balance between the competing interest of local and wide-area SMRs operating in the 800 MHz band, and to establish a licensing scheme that furthers the congressionally-mandated goal of regulatory symmetry between SMR and cellular broadband Personal Communications Services (PCS).

The Commission concluded that competitive bidding should be used with respect to the 800 MHz SMR, and proposed competitive bidding designs for the 800 MHz SMR service. For the Major Trading Area (MTA) licenses, the Commission proposed simultaneous multiple round auctions based in the expected high value of such licenses and their high degree of interdependence. In the simultaneous multiple round auctions context, the Commission proposed to adopt bid increment, stopping rules and activity rules for 800 MHz SMR as provided in the Competitive Bidding Second Report and Order. For the lower 80 licenses, however, the Commission proposed single round (sealed bid) auctions.

Additionally, the Commission proposed preferences for designated entries, i.e., businesses owned by women, minorities, and small businesses. For businesses owned by women and minorities, the Commission proposed a 40 percent bidding credit and the availability of tax certificates for initial investors and persons transferring their authorizations to minority and female-owned businesses.

For small businesses, the Commission proposed installment payments. Comments are requested on whether additional special provisions are appropriate for

"lower 80" channel applicants, including designating these channels as an "entrepreneurs' block." The Commission also proposed incorporation and adoption of the unjust enrichment provisions adopted in the Competitive Bidding Second Report and Order applicable to installment payments and bidding credits, and proposed to adopt unjust enrichment provisions for parties receiving licenses as a result of the FCC's tax certificate policy.

The Commission proposed to follow the procedural, payment and penalty rules, bid withdrawal, default and disqualification provisions, and regulatory safeguards (including performance requirements and rules prohibiting collusion) established in the Competitive Bidding Second Report and Order, with certain minor modifications designed to address the characteristics of the 800 MHz SMR service.

Additionally, the Commission proposed new rules for assignment of blocks of SMR spectrum in defined market-based service areas that will facilitate the development of wide-area, multi-channel SMR systems that are comparable to and compete with cellular and broadband PCS systems. The Commission proposed to designate a portion of the 800 MHz SMR band allocation for continued licensing on a local, station-by-station basis to accommodate the needs of smaller SMR systems that primarily seek to provide local service.

The Commission addressed how exiting

SMR systems will be treated under this new regulatory framework, particularly in instances where they are operating on channels that will become part of the spectrum blocks to be licensed on a wide-area basis. The Commission also proposed new application and licensing procedures for both the wide-area SMR spectrum blocks and locally licensed SMR channels, including competitive bidding procedures for resolution of mutually exclusive applications. Comments are requested on whether the Commission should continue to license SMR systems on 800 MHz General Category channels or on other non-SMR channels through the inter-category sharing.

The Commission said that the proposals put forth today are intended to build upon and refine its previous efforts to promote the development of wide-area SMR service in the 800 MHz band. In addition, the proposals are part of its continuing implementation of the new regulatory framework for mobile radio services enacted by Congress in the Omnibus Budget Reconciliation Act of 1993.

Propose Allocation of Spectrum Transferred from Federal Government to Private Sector

The Commission adopted a Notice of Proposed Rule Making that will convert a

large block of spectrum from Federal Government to commercial use. This spectrum would be made available for a variety of new services, creating new business opportunities and employment.

The Commission has proposed a general allocation to the Fixed and Mobile services for 50 MHz of spectrum identified by the Department of Commerce for transfer from Federal Government use to private sector use. According to the Commission, the proposed allocations will benefit the public by providing for the introduction of new services or the enhancement of existing services.

In compliance with the provisions of Title IV of the Omnibus Budget Reconciliation Act of 1993, the Department of Commerce released a report on February 10, 1994, which made preliminary identification of 200 MHz of spectrum for reallocation from Federal Government to private sector use, including 50 MHz at 2390-2400 MHz, 2402-2417 MHz, and 4660-4685 MHz that is immediately available. The Reconciliation Act requires the Commission to adopt rules by February 10, to allocate the spectrum.

The Commission stated that its principal objective when making spectrum allocation decisions is to ensure that the spectrum is put to its best use. The Commission proposed to achieve this goal by proposing a broad and general allocation to the Fixed and Mobile services for all three fre-

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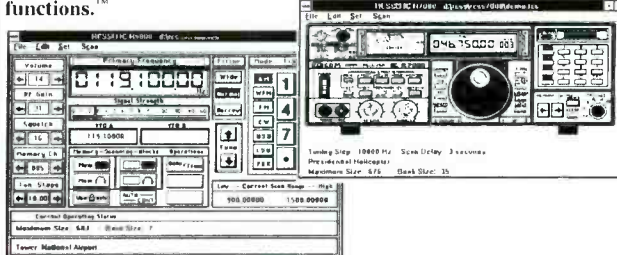
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quency bands. Such an approach, the Commission said, would allow for flexible use of these bands so licensees would be able to offer a wide range of services employing a variety of technologies. The FCC requested comment on this approach.

The Commission also believes that most of the services to be provided in this spectrum would likely meet the statutory criteria for auctions. Therefore, the FCC proposed to make licenses for this spectrum available through competitive bidding to the extent possible and practicable.

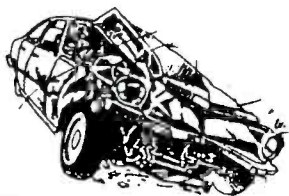
The Commission seeks to create a competitive market structure that would pro-

mote reasonable prices for users and provide operators with incentives to develop and introduce innovative service features and technologies. The Commission requests comment on an appropriate licensing structure, including channel block size and geographic licensing areas.

The Commission also proposed to allow technical flexibility in the provision of services. Specifically, the FCC proposed to allow users to choose the channelization signal strength, modulation techniques and antenna characteristics in providing service, consistent with not causing interference to other users. Interference to oper-

ations in adjacent service areas would be controlled through power limits at the service area boundaries. Licensees would also be free to negotiate and develop agreements for interference conditions at the boundaries between their service areas. Comments are requested.

As an alternative to allocating this spectrum generally for Fixed and Mobile services, the Commission requested comment on the possible allocation of these bands for specific communications services. A number of suggestions were put forth by various commentaries responding to the Notice of Inquiry in this proceeding. These include an aeronautical audio/video service, broadcast auxiliary services to support advanced television, low-power communications, and continued use of some of this spectrum by the amateur community.



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FCC Establishes Office of Workplace Diversity; Reorganizes Three Other Bureaus/Offices

The FCC created the new Office of Workplace Diversity, and reorganized the Office of Communication Business Opportunities (formerly the Office of Small Business Activities); Office of Legislative and Inter-governmental Affairs (formerly Office of Legislative Affairs); and the Office of General Counsel (OGC). This action is part of the Commission's continuing commitment to reinventing government.

The Office of Workplace Diversity will administer the FCC's internal Equal Employment Opportunity (EEO) program. Among other things, the Office will provide consulting services to employees and applicants who believe they have been discriminated against because of race, color, religion, sex, national origin, age, or handicap. The Office will develop FCC affirmative action plans and monitor progress toward approved goals.

Additionally, the Office will develop and administer the Commission's program of handicap accessibility and accommodation in accordance with the Americans with Disabilities Act, and other applicable regulations. The Office will also plan, develop, and conduct workplace diversity awareness programs for FCC employees.

The Commission added a new division within the OGC. The new Competition Division of the Office of General Counsel will serve as the Commission's advocate for competition through the telecommunications industry. The Division will provide FCC Bureaus/Offices with the necessary support to identify, evaluate, and effectively resolve competitiveness issues. James Olson is the Chief of the new division.

The Office of Communications Business Opportunities will advise the Chairman and Commissioners on issues, items, and policies concerning opportunities for ownership and contracting by small, minority,

and women-owned communications businesses, and opportunities for employment of minorities, women, and people with disabilities in the communications field. The Director of the Office of Communications Business Opportunities is Anthony Williams and Catherine Kisse Sandoval is the Deputy Director.

Finally, the FCC has renamed the Office of Legislative Affairs and enlarged the scope of its activities. The reorganized Office of Legislative and Inter-Governmental Affairs informs the Congress of the FCC's regulatory decisions, facilitates responses to congressional inquiries, and prepares Commission responses to legislative proposals. In addition, the Office acts as liaison to other federal, state, and local government agencies. Judith Harris is the Director.

Rules Proposed to Increase Amount of Spectrum Available for Commercial Use

The Commission proposed making available 18 GHz of spectrum in the "millimeter wave" frequency bands above 40 GHz for the introduction and development of new commercial technologies. This would substantially increase the amount of spectrum space available for commercial uses and could shift the emphasis in this band from military to civilian applications. The same type of technology that is being

developed to guide "smart bombs" could soon be used to warn drivers that their car is too close to the one in front of them.

The term millimeter wave frequency bands refers to the fact that wavelength of radio signals on frequencies between 30 GHz and 300 GHz ranges from one and ten millimeter waves.

Until now, millimeter wave technology has been limited to military and scientific applications. The new proposals for commercial use of this spectrum encourages delivery of commercial products and services.

Making these new frequencies available will permit the development of short-range wireless radio systems that could have communications capacities approaching those now achievable only with coaxial and optical fiber cable. Such systems could support many short-range applications that require very high bandwidth or data transfer rates. Uses could include educational or medical applications such as remote wireless access to libraries or other informational databases; and non-communication uses such as automobile radar systems to avoid collisions.

The proposed rules provide for the operation of new services on both licensed and unlicensed bases. The short range of signals in this frequency range minimizes the potential for interference, allowing the Commission to permit unlicensed operation for many uses.

The radio spectrum above 40 GHz is generally unused because the technology

to operate in this portion of the spectrum has been prohibitively expensive. In recent years, however, the U.S. Government has funded projects in millimeter wave technology for a number of military and scientific applications. The Defense Department's Advanced Research Projects Agency has funded a nearly \$600,000,000 program to decrease component costs for this technology. Given these advances, the Commission said, it now appears that millimeter wave technology for a number of military and scientific applications.

The Commission is proposing to open a substantial portion of millimeter wave spectrum for use by new communications services and technologies. Almost all of the spectrum above 40 GHz is shared between government and non-government use. In Administration (NTIA), the Commission identified 12 frequency bands between 47 GHz and 153 GHz for potential use by new millimeter wave technologies. The Commission tentatively proposed to make available 6.3 GHz of spectrum for licensed operation, 8.5 GHz of spectrum for general unlicensed devices, and 3.2 GHz of spectrum for vehicular radar systems.

The bands are: 40.5-42.5 GHz; 47.2-48.2 GHz; 59.0-64.0 GHz; 71.0-72.0 GHz; 76.0-77.0 GHz; 84.0-85.0 GHz; 94.7-95.7 GHz; 103.0-104.0 GHz; 116.0-117.0 GHz; 122.0-123.0 GHz; 126.0-127.0 GHz; 139.0-140.0 GHz; and 152.0-153.0 GHz. ■

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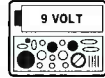
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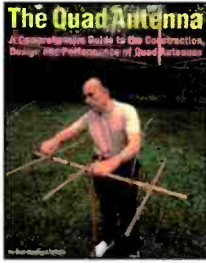
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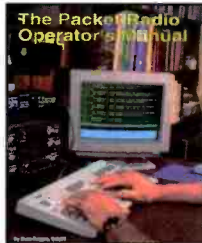
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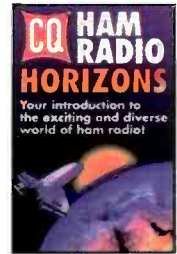
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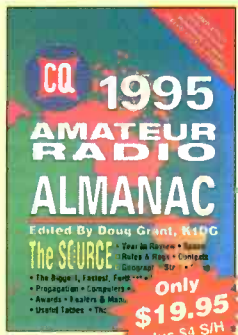


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ACE



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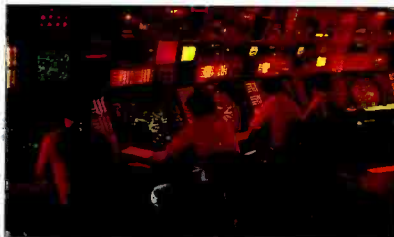


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